THE USE OF EVIDENCE FOR IMPROVING THE DELIVERY OF POST-RAPE CARE IN SOUTH AFRICA

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A thesis completed by published work,
Submitted to the School of Public Health, Faculty of Health Sciences,
University of the Witwatersrand,
in fulfilment of the requirements for the degree of
Doctor of Philosophy

JOHANNESBURG, SOUTH AFRICA
19 November 2015

DECLARATION

This thesis is submitted in the optional format, approved by the Faculty of Health Sciences, of published work with an encompassing introduction and conclusion.

I, Ruxana Jina declare that this thesis is my original work. Where there has been contribution from other people, this has been duly acknowledged. It is being submitted for the degree of Doctor of Philosophy in Public Health in the University of the Witwatersrand, Johannesburg, South Africa. It has not been submitted before for any degree or examination at this or any other University.

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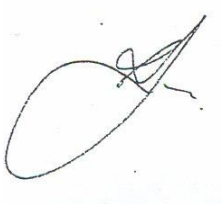

Signature:

Name: Ruxana Jina
Date: 19 November 2015

DEDICATION

I dedicate this thesis to my family. Shafi, your patience and kindness towards me will always be appreciated. You have brought much joy into my life. To my mother, sisters and brother-in-law, nieces and nephews who have stood by me through all of my years, I thank you.

Finally, I dedicate this thesis to my father, who instilled in all of us an appreciation for education and the advancement in knowledge. Dad, I miss you very much and wish you were here to share this moment with me and bask in the glory of what your children have achieved through your efforts.

This thesis began with a hope and undertaking to improve care and services for survivors of rape and sexual violence. I dedicate this thesis to all women who have endured such suffering.

ACKNOWLEDGEMENTS

This thesis would not have been possible without the continuous support, encouragement and motivation from my supervisor Rachel Jewkes. Rachel has previously supervised my two Master's reports but this was a much longer journey than she anticipated, and I am grateful for her constant faith in my abilities. I wish to also thank Shan Naidoo who provided me with many opportunities and Nicola Christofides for providing me with advice and guidance throughout the thesis. I would like to thank Lisa Vetten for granting me permission to use the data from Study 3 for this thesis. I would also like to thank the staff of the Gender and Health Research Unit of the South African Medical Research Council who became a family to me. Leane and Nishila, thank you for our mini-support group.

I received funding from the following organisations for the studies used in this thesis: the World Health Organization, the UK Department for International Development (DFID), the Norwegian Centre for Human Rights, the Open Society Foundation, the Ford Foundation, and the Medical Research Council of South Africa. The views expressed in the thesis are those of the authors and not necessarily those of the funders.

I would finally like to thank the fieldworkers who supported the research process. Most importantly, I wish to thank the health care providers, health care facilities, police stations and courts that participated in various components of the studies.

PUBLICATIONS AND PRESENTATIONS ARISING FROM THIS STUDY

PUBLICATIONS:

- Jina R, Jewkes R, Christofides N, *et al*. 2013. Knowledge and confidence of South African health care providers regarding post-rape care: a cross-sectional study. *BMC Health Serv Res*., 13:257.
- Jina R, Jewkes R, Christofides N, *et al*. 2014. A cross-sectional study on the effect of post-rape training on knowledge and confidence of health professionals in South Africa. *Int J Gynaecol Obstet*., 126(2):187-92.
- Jina R, Jewkes R, Vetten L, *et al*. 2015. Genito-anal injury patterns and associated factors in rape survivors in an urban province of South Africa: a cross-sectional study. *BMC Womens Health*, 15(1):29.

ADDITIONAL PUBLICATION INCLUDED IN SUPPORT OF THE PhD THESIS:

- Jewkes R, Christofides N, Vetten L, *et al*. 2009. Medico-Legal Findings, Legal Case Progression, and Outcomes in South African Rape Cases: Retrospective Review. *PLoS Med*., 6: e1000164. doi:10.1371/journal.pmed.1000164.

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PRESENTATIONS:

- Jina R, Jewkes R, Christofides N, Loots L. Changes in knowledge and confidence in South African health providers attending a national training programme on post-rape care. Proceedings of the Faculty of Health Sciences Research Day, Johannesburg, 17 September 2014.
- Jina R, Jewkes R, Christofides N, Loots L. Changes in knowledge and confidence in South African health providers attending a national training programme on post-rape

care. Proceedings of the 10th Public Health Conference, Polokwane, 4 - 5 September 2014.

- Jina R, Jewkes R, Loots L, Christofides N. Knowledge and confidence of South African health care providers on providing post-rape care. Proceedings of the SVRI Forum 2011, Cape Town, 10 – 13 October 2011.

ABSTRACT

Introduction

Rape is a human rights violation and has significant health and social impact. South Africa, with its historical background seeped in violence has high levels of crime including a high prevalence of rape. As such, the South African government has made some efforts to improve the health and criminal justice response to rape, but in general these have been slow, disrupted or reversed. A review of the literature on post-rape health care has indicated that there are areas in the delivery of service where sufficient evidence is lacking, and where research is available, high quality work has predominantly been undertaken in high-income countries. The aim of this thesis was to strengthen the evidence base for post-rape care service in South Africa by addressing some of the gaps in the literature.

Methodology

For the thesis, data from three studies are presented in three published and one unpublished article. The first study consists of a systematic review of articles published between 1990 and 2014 that evaluated the effect of health system models of care on survivors of rape or IPV in terms of health outcomes, rape or IPV recurrence, provision of related services, and referrals. The second study was related to a national post-rape care training programme. Baseline knowledge and confidence were assessed and multivariable analyses were done to test for factors associated with higher knowledge and confidence levels. The change in knowledge and confidence was also calculated from baseline to post-training, and factors associated with these changes were tested through two logistic models.

The final study comprised of a review of a random sample of rape cases that were reported in Gauteng province in 2003. In the second publication, descriptive analyses were done to present the pattern of genito-anal injuries. In addition, logistic regression was done to test for survivor, rape and examination characteristics that were associated with the absence of genito-anal injuries in all survivors and those who had no previous sexual experience.

Findings

In the first study, no model of post-rape or IPV care could be recommended in relation to the tested outcomes due to the lack of studies on that evaluated the effect of a post-rape model of care on the specific outcomes, and due to the lack of high quality studies on IPV models of care.

In the second study, it was found that the knowledge of health care providers was low although confidence was high. Higher baseline knowledge was associated with rank, having an appropriate attitude towards rape, and having served less time at the current facility, while higher confidence levels were associated with having a crisis centre in the facility and being involved in care of survivors. Significant improvements in knowledge and confidence levels were noted after the training, and providers with lower levels of empathy were found to have greater changes in knowledge. The facility level and baseline knowledge and confidence levels were associated with change in confidence.

An earlier publication from the final study, for which I was a co-author, showed a strong association between the documentation of injuries and case progression in the justice system, so it was considered important to test for the factors associated with the absence of injuries in this study population. Here it was noted that there was a significantly greater odds of having injuries in survivors who were virgins, if multiple perpetrators had raped survivors, and if doctors with additional qualifications had examined survivors.

Conclusion

The findings of this thesis have implications for post-rape health care services in three broad focus areas: the organisation of services, the selection and capacitation of providers, and the interpretation of medico-legal evidence in term of genito-anal injuries. Proposals are suggested regarding potential improvements that could be made to post-rape care services in South Africa. The findings provide evidence for some of the principles in the South African National Sexual Assault Policy and raises important questions for future research work such as the need to critically evaluate the Thuthuzela one stop model that is being implemented in South Africa.

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LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
CAS	Crime administration system
CHC	Community health centre
CI	Confidence interval
EU	European Union
FCS	Family violence, Child protection and Sexual offences
GBV	Gender-based violence
HIC	High-income countries
HIV	Human immunodeficiency virus
IPV	Intimate partner violence
IQR	Interquartile range
KZN	KwaZulu-Natal
LGBT	Lesbian, gay, bisexual and transgender
LMIC	Low and middle-income countries
MRC	Medical Research Council
NGO	Non-governmental organisation
NPA	National Prosecuting Authority
OCC	One-stop crisis centre
OR	Odds ratio
PHC	Primary health care
PEP	Post-exposure prophylaxis
PTSD	Post-traumatic stress disorder
RCT	Randomised controlled trial
SADC	Southern African Development Community
SAECK	Sexual assault evidence collection kit
SANE	Sexual assault nurse examiner
SAPS	South African Police Services
SD	Standard deviation
STI	Sexually transmitted infection

TB	Tuberculosis
TCC	Thuthuzela Care Centre
UK	United Kingdom
UN	United Nations
USA	United States of America
WHO	World Health Organization

CHAPTER 1

INTRODUCTION: SETTING THE SCENE

1. INTRODUCTION

This chapter provides an overview of rape as a public health problem and how this has been addressed on the global agenda. Furthermore, it presents a summary of efforts made by the South African government and the current shortfalls with these initiatives. It provides the motivation for undertaking this research and the framework that was used to guide the work. Chapter 2 expands the picture by presenting literature on the epidemiology and health consequences of rape and service delivery models for post-rape care.

2. BACKGROUND

Rape is a deeply personal form of physical assault and a criminal offence. It forms part of the wider definition of sexual violence, which in turn falls into the ambit of the much more broadly defined gender-based violence (GBV) or violence against women. The United Nations (UN) defines violence against women as "any act that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life" (1). As such, sexual violence and intimate partner violence (IPV) is included in this sphere. Globally, violence against women is considered to be a major public health problem; it limits women's productivity and advancement, impedes the well being of families and communities, and places a strain on resources (2). It is recognised as a human rights violation, and as such, many international declarations and documents speak to the prevention and end of violence against women (3).

In 1979 the Convention on the Elimination of all Forms of Discrimination against Women was adopted by the UN General Assembly and in 1993, the World Conference on Human Rights recognized violence against women as a violation of human rights in the Vienna Declaration and

Programme of Action (4, 5). The hallmark Declaration on the Elimination of Violence against Women was passed in 1993 and in 1994 the Programme of Action for the International Conference on Population and Development called on governments to take measures to respond and prevent violence against women and girls (6, 7). In 1995, at the Fourth World Conference on Women, comprehensive commitments for 12 critical areas were made in the Beijing Declaration and Platform for Action, one of which was ending violence against women and girls (8). More recently, in 2013, the Commission on the Status of Women adopted agreed conclusions on the elimination of all forms on violence against women and girls at their 57th session (9).

On the continent, South Africa has ratified the African Charter on Human and Peoples Rights, which includes the elimination of discrimination against women (10), and as part of the Southern African Development Community (SADC) issued a Declaration on Gender and Development in 1997 (11). This required governments to take "urgent measures to prevent and deal with the increasing levels of violence against women and children" (11). This was expanded in the Addendum on the Prevention and Eradication of Violence against Women, which was published in 1998 (12).

It is therefore expected that governments, through their various entities, make provision for the prevention and management of rape. This includes social, security, health and justice activities. The health sector plays a critical role in mitigating the impact of rape, supporting the survivor and aiding the justice system in seeking restitution for the survivor. It is imperative that the health care system is directed towards these needs through a suitable health sector response (13). As such, health care providers should also appreciate the value of their role and the expectations that are linked to it in the delivery of care to survivors. What was once considered to be solely a police or judicial matter has subsequently been placed firmly in the health sector as well.

Survivors access the health sector through multiple entry points and for various health needs. Initially, survivors require immediate health care after the rape for the treatment for injuries and prevention of pregnancy and sexually transmitted infections (STI). In addition, mental health support is important at this time. Medium to long-term health sequelae and adverse health

behaviours have also been reported amongst survivors. This includes risky sexual practices, and poor health in general, especially in relation to gynaecology and obstetric care. Their health needs may therefore be directly or indirectly related to their experience of violence, yet they often do not disclose its occurrence (14, 15). It is therefore difficult to determine the cost related to the provision of health care to survivors. In South Africa, IPV has been estimated to account for 11% of disability-adjusted life years (95% confidence interval (CI) 9% - 13%) (16), with the cost of GBV for the country being between R28 billion and R42 billion (≈$3 – $4.5 billion[1]) for the year 2012/2013 based on a prevalence rate of 20% to 30% (17). This is equivalent to 0.9% to 1.3% of the gross domestic product.

Health services are often the earliest and sole point of contact for survivors, yet health care providers frequently manage only their immediate needs and fail to provide more comprehensive care; or worse - they may disregard their needs, assuming that survivors may have done something to initiate the violence. The role of health care services is to provide medical and psychological care, and to assist in reducing the survivor's risk of further exposure to violence. Many governments have attempted to address this through training or by implementing narrow procedural changes, such as requiring providers to screen women for IPV. However, evidence has indicated that these interventions have limited success and that a "systems approach" is required. Nonetheless, the health sector is unable to respond to all of the needs of survivors. Therefore, health services need to collaborate with the criminal justice and social services, and facilitate access to them (2). Thus, the focus of this PhD thesis is to provide evidence for improving post-rape care services, and in part, IPV services for women in the South African context.

3. WHAT IS RAPE?

The legal definition of rape varies across countries and settings, and can even change over time. For example, in South Africa, rape was previously defined in the Sexual Offences Act 23 of 1957 as "a man having unlawful, intentional sexual intercourse with a woman without her

[1] Based on the average exchange rate for 2012/2013 for the South African rand (ZAR) to United States dollar (USD).

consent" (18). Sexual intercourse was limited to penetration of the female sexual organ by the male's penis and the offence was thus considered to be gender specific, which could only be committed by a man against a woman. It was also limited to penile-vaginal penetration, excluding oral or anal penetration, or penetration of the genitals by other objects, for example, a stick.

In 2007, the Criminal Law (Sexual Offences and Related Matters) Act was passed with a new definition of rape (19). According to the gender-neutral definition any person who unlawfully and intentionally commits an act of sexual penetration without the consent of the other party, is guilty of the offence of rape. Rape also includes penetration of the anus, mouth or genital area of a man or woman by another and penetration of the genital area or anus by objects other than a penis. According to the Act children under the age of 12 years are presumed incapable of consenting to sexual intercourse and any sexual act with them would constitute rape. The Act constitutes that sexual activity between the ages of 12 and 16 years is criminalized in specific conditions, however sections 15 and 16 defining these conditions were found to be unconstitutional and have been repealed for revisions (20). The law also states that a person with mental incapacity is unable of consenting to sexual intercourse but the severity of the impairment is considered pertinent in the application (19). In addition, the Act defines a list of sexual offences, which includes a range of sexual acts that do not include penetration, such as groping, sexual exploitation or child pornography (19).

In South Africa, IPV is defined legally in the Domestic Violence Act as "physical, sexual, emotional and psychological, verbal, and economic abuse as well as intimidation, stalking, damage to property, and trespassing between any two people who are in a domestic relationship" (21).

4. NATIONAL AND PROVINCIAL GOVERNMENT INITIATIVES IN SOUTH AFRICA TO IMPROVE THE DELIVERY OF POST-RAPE CARE

4.1. INITIATIVES BY THE DEPARTMENT OF HEALTH

Since the start of democracy 20 years ago, a number of efforts have been made by the Department of Health to improve post-rape care and related services as part of a broader package of comprehensive sexual and reproductive health services. It began with the integration of the service into the Primary Health Care (PHC) Package (22). Soon after this period, a new law expanded the availability of termination of pregnancy services in 1997 (23). This was followed by local training initiatives on post-rape care for doctors and the first group of forensic nurses was trained through a pilot project in 1997[2]. This ad hoc training continued for a decade until in 2007 the National Department of Health recognized the need to develop a standardized training curriculum for the country. Furthermore, it became a legal requirement according to the Criminal Law (Sexual Offences and Related Matters) Amendment Act (19).

Following the early training initiatives, a number of policies and guidelines were developed and launched. The Policy Guidelines for Youth and Adolescent Health was published in 2001 (24), the National Contraception Policy Guidelines in 2002 (25) and the National Management Guidelines for Sexual Assault Care in 2003 (26), followed by the National Sexual Assault Policy in 2005 (27). Furthermore, the linkages between GBV (including rape), the human immunodeficiency virus (HIV) and the provision of comprehensive care for sexually transmitted infections (STI) and post-exposure prophylaxis (PEP) for HIV have been addressed in the HIV and AIDS[3] and STI Strategic Plan for South Africa 2007 – 2011 (28) and the National Strategic Plan on HIV, STIs and TB[4] 2012 – 2016 (29). Also in 2011, the Department of Health adopted a framework to guide the actions of the Department in the field of sexual and reproductive health and rights[5].

[2] Email communication with Virginia Lynch, 1st February 2008. Virginia Lynch is considered to be the founder of forensic nursing in the United States of America.
[3] Acquired immunodeficiency syndrome
[4] Tuberculosis
[5] National Department of Health. Sexual and Reproductive Health and Rights: Reviewing the Evidence. Pretoria, South Africa: Department of Health.

Although the Contraception Policy Guidelines was updated quite extensively into the National Contraception and Fertility Planning Policy and Service Delivery Guideline (30), and the National Contraception Clinical Guideline (31) in 2012, updates on other policies have been much slower. In 2012, an updated draft for the Adolescent and Youth Health Policy was circulated for review but no further activities have been noted on publishing the final document (32). Similarly, since 2010, the I have been involved in developing a revised version of the National Policy and National Clinical Management Guidelines for Rape, Sexual Assault and Other Related Sexual Crimes but the process has stalled over the last couple of years.

4.2. EFFORTS IN OTHER SECTORS

On-going efforts have been made by other government departments and intersectoral work related to the prevention and management of rape. This included the establishment of a National Crime Prevention Strategy (33), which was approved by Cabinet in 1996, and the launch of the National Policy Framework for Women's Empowerment and Gender Equality (34) by the Office on the Status of Women in the Presidency. South Africa has continuously participated in the 16 days of activism against gender violence campaign and in 2006 the Kopanong Declaration extended this to a 365-day national action plan to end violence against women and children (35). In 2009, a Department for Women, Children and People with Disabilities was established to promote and protect the rights of these subgroups of the population.

A number of initiatives have also occurred within government departments. In 1995, the South African Police Services (SAPS) set up Family violence, Child protection and Sexual offences (FCS) Units to improve the investigation of such crimes (36). Since 2000, the Forensic Science Laboratory under the SAPS has also been working to improve the Sexual Assault Evidence Collection Kit (SAECK) and other kits for the collection of evidence after a crime of rape. Recognizing the need to improve prosecution rates for rape, the National Prosecuting Authority (NPA) established the first Thuthuzela Care Centre (TCC) in Manenberg town in 2000 (37) and has rolled out the model to other areas in the country over the years. This service model is described in detail in Chapter 2. The NPA also established Sexual Offences and Community Affairs Units in 1999 to assist in the prosecution of sexual offences cases (38). The first Sexual

Offences Courts were opened by the Department of Justice in 1993 and expanded to other areas of the country after a blueprint for the courts was developed in 2003 (39). The medico-legal documentation (J88 form) was revised by the Department of Justice and a new version was made available in 1999 (40). A national panel of doctors, through the NPA, proposed extensive revisions of the form in 2008, and although these have been considered by the Department of Justice a new form has not yet been published[6]. Lastly, the Department of Social Development launched the Policy Framework and Strategy for Shelters for Victims of Domestic Violence in South Africa in 2003 (41). This was followed by a National Policy Guidelines on Victim Empowerment, which was approved in 2009 (42) and the South African Integrated Programme of Action addressing Violence against Women and Children (2013 – 2018) that was published in 2014 (43).

Important laws that came into effect during this period included the Prevention of Family Violence Act in 1993 which was replaced by the Domestic Violence Act in 1998 (21), the Choice on Termination of Pregnancy Act in 1996 (23), the Children's Act in 2005 (44), and the Criminal Law (Sexual Offences and Related Matters) Amendment Act, which came into effect in 2007 (19).

5. QUALITY OF POST-RAPE CARE SERVICES IN SOUTH AFRICA

As highlighted above, significant changes in post-rape care services occurred in the country since 1994. The services that were originally provided by district surgeons received much criticism from the Human Rights Watch (45, 46). Access was highlighted as a major problem and the Demographic and Health Survey conducted in 1998 suggested that only 6% of women who had been raped used health care services (47). In an attempt to address concerns related to the poor quality and lack of access, the services were relocated to all health care facilities as part of the PHC package but were still mainly provided by doctors (48).

After restructuring of the services, a number of challenges were identified. It is evident from the published literature that there was insufficient and inadequate training at the time (49–51). A

[6] I have been the contact person on behalf of the doctors with the NPA and Department of Justice

national situation analysis that was first published in 2003 found that only a third of the health care providers were trained on post-rape care (49). In a separate study conducted in the same year in the Western and Southern Cape provinces, 72% of health care providers who completed SAECKs had not received training on the use of the kits although more than half of the group (56%) provided sexual assault services for two years (50). Furthermore, a study conducted later in 2005 found that 73% of health care providers from six provinces reported having been trained although they had all completed SAECKs (51). In addition, those who underwent training reported a bias toward the clinical aspects of care with only 35% of providers being trained on gender issues in the national study published in 2003 (49) and 47% in 2005 (51). Half of the providers were trained on psychological aspects of care in both studies (49, 51).

The location of services, availability of equipment and protocols are crucial to the provision of services and based on the national situational analysis were found to be inadequate. Less than two-thirds (58%) of facilities had a private room for examination, only 52% had provision of an angle lamp, 80% stocked pregnancy tests and 41% had a protocol in place (49). The delivery of medical care was also found to be unsatisfactory. Seventy-one percent of health care providers conducted pregnancy tests, approximately four-fifths (84%) offered survivors emergency contraception and 37% named the correct drugs for STIs (49). Trained providers were not found to provide better quality of care, but this may have been related to length of training, topics covered during training and interest of the health care providers. In a study conducted at a hospital in Bloemfontein city in 2003, 15% of rape survivors were not informed about STI risks and 11% were not informed about the possibility of falling pregnant (52). A study conducted by Kim and colleagues in the same year in one hospital in Mpumalanga province found that 65% of survivors were given emergency contraception which increased to 73% after interventions were implemented by the researchers (53, 54) and rose further to 81% after a second intervention phase was conducted between 2006 and 2007 (55). In this study 88% of survivors received STI treatment, which increased to 92% after the first phase of the intervention (54).

A major concern with the delivery of medical care to rape survivors became the provision of PEP for HIV. During a peak period of acquired immunodeficiency syndrome (AIDS) denialism in the country from 2000 to 2003, medical doctors were suspended or reprimanded for issuing PEP

to rape survivors and non-governmental organisations (NGOs) that provided the treatment were targeted by government (56). In 2002, Cabinet eventually issued a statement regarding HIV and AIDS which included a pledge to develop of a programme for the provision of PEP to survivors of rape (56). However, the actual delivery of the programme has been found to be poor. In the study conducted in Mpumalanga by Kim and colleagues, only 15% of survivors who were eligible for PEP received the full 28-day course during the baseline study in 2003. However, this increased to 55% after the first phase and 68% after the second phase of the intervention (54, 55). Although this had markedly increased from the initial service, adherence remained fairly low. Similarly, a study conducted in the Eastern Cape province between 2005 and 2006 found that only 31% of rape survivors completed their full 28 day course of PEP (57). The survivors reported that they struggled with the stigma of being raped, had poor knowledge and poor social support. Poor follow-up in general was strongly linked to socioeconomic circumstances of the survivors (58).

Despite a strong focus on forensic care for legal purposes in training, shortfalls have also been noted in evidence collection. In 2005, the quality of documentation that was submitted with SAECKs was assessed and no form was fully completed, which is important for maintaining the chain of evidence and interpreting findings from DNA analyses (51). The availability of kits was also limited as only 35% of health care providers reported that they had SAECKs available at their facility.

During this entire period the role of nurses in providing post-rape services was not clear. In 1997 a few forensic nurses from the United States of America (USA) trained the first group of nurses[7]. Since then there has been piecemeal training until the University of the Free State began offering an Advanced Diploma in Forensic Nursing in 2000. Nonetheless, no forensic nurse training or qualification was recognized by the South African Nursing Council at that time. The deployment of these nurses within facilities was therefore problematic as there were no specialized posts for them in most human resource structures. Thus, it was reported within the national situation analysis that only 5% of facilities employed nurses who conducted examinations (49) and only 5% of SAECKs had been completed by nurses in 2005 (51). During

[7] Email communication with Virginia Lynch, 1st February 2008.

a national stakeholders' meeting in 2008 it was noted that many nurses were employed in the services but they did not always examine rape survivors. Their ability to examine and testify in court was dependent on the judiciary within areas or provinces recognizing them to be experts in the field. Although the South African Nursing Council was approached by various academic institutions, research organisations and NGOs they made little effort to recognize the qualifications until March of 2013 when a special workshop was organised to develop competencies for forensic nursing[8] (59) and these were eventually published in May 2014 (60).

Health system and provider factors have been found to play an important role in the delivery of care (61). In Mpumalanga, rape survivors who accessed health services directly were redirected to the police by health care providers as opposed to receiving immediate care, and the fragmented delivery of the services resulted in survivors having long waiting times with up to 11 different contacts (62). A study on a training programme for PHC nurses to screen women for IPV reported that staff shortages would act as a potential barrier for implementation (63). A follow-up study that trained HIV counsellors noted that none were screening women a year later due to a number of factors including time constraints, sex of the counsellors, difficulties in addressing the women's other needs and finally the conservative attitude of counsellors (64). The attitude of providers has also been raised as a concern in other studies. For instance, in the national situational analysis report it was found that 33% of the providers did not consider rape to be a serious medical condition (49) and in Mpumalanga, the hospital pharmacist was found to block the issuing of PEP to some survivors as he was of the belief that women lie about rape (62). In the private sector in Gauteng, 6% of pharmacists interviewed in 2003 reported that they would not give emergency contraception to rape victims, while 58% stated that they would not provide females of less than 18 years of age with emergency contraception (65). Survivors who may be considered to have socially unacceptable behaviour such as addicts or sex workers face additional barriers to accessing care (66, 67).

It is assumed that the personal experience of rape or IPV by health care providers can influence the delivery of health services, but this relationship is complex (68). Although this should not

[8] Email communication with Thandi Manganye, 20th March 2013. Thandi Manganye was the Acting Registrar and CEO of the South African Nursing Council at the time.

preclude health care providers from working in the service as it was observed that some might provide better quality of care with more empathy as a result of such personal experiences. However, it may result in difficulties dealing with the situation for others who might avoid the topic or be sceptical of the survivor's experience (69–74). This may be especially true for health care providers who have experienced similar situations. In a study looking at domestic violence in nurses working in the North West province in 2002, 39% had personal experiences while 41% had experience of domestic violence amongst family and friends (69). These nurses were significantly more likely to identify cases of domestic violence, however only nurses who had experience of domestic violence through family and friends had a higher quality of care score for domestic violence management. There was no difference noted in the quality of care scores for post-rape management in health care providers who had personal or family experience with domestic violence compared to those that did not.

Finally, one also needs to consider the survivors and their needs in the provision of the services. Survivors of rape in South Africa were asked about their preference for services, and the following services were reported to be most important: Access to HIV testing and PEP, having service providers who were understanding and empathetic, having a thorough examination and evidence collected and having more return visits for counselling (75). Yet, survivors continue to face challenges and difficulties with services when they report rape. A study on the withdrawal of rape cases conducted from 2004 to 2009 identified problems with the police and health services (76). For instance, amongst one of the cases, a 41-year-old woman with mental impairment went missing overnight and upon being found informed her mother that she had been raped by five men. Her story speaks to the challenges that are faced by survivors in reporting rape and in accessing health care services; her mother spent an entire day seeking assistance as she was turned away multiple times by the police and doctor (76). Furthermore, access for specific populations e.g. children, the disabled, sex workers, lesbian, gay, bisexual and transgender (LGBT) and male survivors have not been well researched. The current National Policy and Clinical Management Guidelines does not cover the care of children in detail (77) as there was an intention to draft separate documents. However, this has not occurred and the revisions, which were meant to address this shortfall has also been delayed. Although, from the policing perspective, the FCS Units focused more on paediatric cases, whereas adult cases were

allocated to general detectives who managed other crimes as well (78). Finally, efforts by the Department of Health and other departments are not sustained and in some cases have been reversed before being implemented again. This affected, for instance, the closure and reopening of the sexual offences courts and the dismantling of FCS Units with them being reintroduced a few years later (39, 79). These disruptions reduce stability and progress, and lead to loss of skills as experienced staff were transferred and cases reassigned (79). Although disregarded, there are also cost implications for these changes. The Department for Women, Children and People with Disabilities has also been criticised for their slow response and lack of activity resulting in stagnation of interventions to address gender equity in the country. In summary, South Africa has either been slow to respond or disrupted their response to rape in the country, and the partly strong commitment and support through laws and policies are contrary to the findings in practice (76).

6. PROBLEM STATEMENT

As post-rape care services were integrated into PHC services, it was hoped that concerns related to accessibility of services and long waiting times would be addressed (45, 47). This change however posed other challenges. Firstly, services had to be integrated into the work of health care facilities. This led to services being offered in a range of areas within facilities, from emergency departments to private rooms and eventually, in some facilities, in separated care centres. Secondly, untrained and inexperienced health care providers were suddenly responsible for providing services for rape survivors, which led to questionable quality in service delivery. In 2005, the National Sexual Assault Policy and the National Management Guidelines for Sexual Assault Care provided a framework for the organisation of services and guided health care providers on the provision of these services (25, 26).

According to the Policy, post-rape care is considered to be a specialized service, which is provided by specially trained health care providers. The provision of training structures, guidelines and standards has been listed as one of the objectives of the Policy (27), but these were never clearly defined. In an attempt to meet this need and to improve the quality of post-rape care services, provincial Departments of Health and local organisations developed trainings

but this resulted in a range of courses varying lengths and covering different aspects of service provision, most of which were not evidence-based.

These variations in practices have resulted in a wide diversity in the provision of care. Yet, it is still unclear as to whether it is acceptable and suitable to have emergency department-based services as opposed to specialized care centres, and whether the provider of care should be an emergency department-based staff member or an individual specialising in the provision of post-rape care services. The medical and legal outcomes of these practices have also not been well investigated in terms of improvements for women and their families (80). There is a need for evidence of effectiveness, and a measure of benefits versus risks with all of the current initiatives within the South African context.

7. JUSTIFICATION OF THE RESEARCH

Survivors of rape access health care services to have their medical and forensic needs met (81). The medical management, evidence collection and documentation require immediate attention that is sensitive to survivors needs while also meeting legal requirements (2). A primary objective of providing health and other related services to survivors is to ultimately hold the perpetrator/s accountable for their crime. In the health care field, a strategy that shows promise in achieving this is to ensure that survivors receive a competent and objective forensic examination following rape (82). Training providers so that they have the ability to do this is the responsibility of the government. However, the training should not understate the importance of comprehensive medical care and long-term management of the health needs of the survivor. Furthermore, the provider needs to be working in an enabling environment to deliver the service. In South Africa, weaknesses have been reported in the delivery of post-rape care services and this thesis provides evidence to improve these services.

In 2008, the National Department of Health tasked the Gender and Health Research Unit of the Medical Research Council (MRC) to develop a national training curriculum on sexual assault and post-rape care for both, doctors and nurses. This was done through a detailed process whereby national and international practices and procedures were considered based on the merit

of the most recent literature that was published. Experts were consulted both, nationally and internationally before the course was developed and tested through a pilot study. It was hoped that the implementation of a standardized training curriculum would result in improvements in the quality of services delivered in all provinces in South Africa.

During the development of the training material, large gaps in data and literature became apparent. These were mainly related to the consequences of rape and new practices in terms of forensic documentation and evidence collection. One part of the thesis will describe the implementation of the pilot training programme and its effect in terms of knowledge and confidence of health care providers. However, experience has shown that training of health care providers and raising awareness on rape and sexual violence is not enough. An entire health system is needed, which ties in with the police, legal and social services. The first part of the thesis will thus focus on whether models of health service delivery improve outcomes for women who are rape survivors and the final part of the thesis will address some of the gaps related to the prevalence and patterns of genito-anal injuries post-rape, and the value of injury documentation for case progression in the South African context. Three studies will be used for this PhD thesis and my role in each of the studies will be described in detail under the Methodology section. The overall aim of this thesis is to contribute to the current knowledge in the field of post-rape care and, in particular, strengthen the evidence related to some focused aspects of this care.

8. CONCEPTUAL FRAMEWORK: DEVELOPING EVIDENCE-BASED POST-RAPE CARE

This conceptual framework and associated factors of post-rape care service delivery was influenced by work published by Goicolea and colleagues (83) and the World Health Organization's (WHO) health system's framework (84). We begin with the WHO goals of the health system, which are to improve health, responsiveness and efficiency while providing social and financial risk protection. For post-rape care services, we would want to improve the quality of health care to survivors and contribute to legal deliberations in post-rape care through evidence collection and documentation of medical findings. Beside the medical care, which inherently has to be based on best clinical practices, the interpretation of findings for legal

purposes also has to be based on evidence to withstand scrutiny in court. A number of steps are therefore required to develop evidence-based post-rape care services (85) (Figure 1). This commences with a review and appraisal of current literature on best practices. Simultaneously, a situational analysis is conducted whereby current service provision is assessed, documents are reviewed and training programmes evaluated.

To ensure evidence-based service delivery, the evidence gathered is then presented, opened for comments at various forums and ultimately translated into policies, guidelines and training manuals. It is also through the monitoring and evaluation of these that either more evidence is generated or that additional gaps in knowledge are identified. During this process decisions are also made on the skills, qualifications and placement of trained health care providers through the development of norms and standards. Going forward, the ability to implement policies, guidelines and best practices into services is influenced by a range of health systems factors, which are personal, institutional and systems-related (1). These factors may be constructive and support services providing an enabling environment, or may bar and hinder post-rape care services. Overarching all of this is a consideration for the survivor's needs and preferences.

The first part of the thesis will provide findings from a systematic review that looked at the evidence available on the effect of a health service model on women's health outcomes. Both in South Africa, and internationally, various models of delivering post-rape care services have been used, yet it is unclear if this has resulted in improved health outcomes for survivors or better service utilisation. The research question therefore being considered is whether the manner in which services are delivered has an influence on the health of survivors (numbered 1 in the figure). Although not a focus of the PhD thesis, this question was extended to IPV services as these have been combined with post-rape care in some countries.

The second part of the thesis examines the impact of a comprehensive training programme on delivering post-rape care. Although various studies have been done on post-rape care training interventions for health care providers internationally, none have occurred in South Africa, and no study has reviewed a national training programme. Here the questions of how effective the national training was in raising knowledge and confidence, and which providers had the greatest

needs for training and benefitted the most from the training are considered (numbered 2 in the figure).

The third part of this thesis focuses on providing evidence that can be used in court by expert witnesses (numbered 3 in the figure). This is one focused area of post-rape services, and has been chosen because it is an area in which health care providers particularly lack confidence and often perform poorly. Research evidence is immensely valuable in expert interpretation of medico-legal findings, especially injury patterns, in the courtroom (86), yet the international body of literature to which health care providers may refer to is small with various limitations. As the presence injuries may play a crucial role in the progression of legal cases (87) and their interpretation is often the subject of interrogation in court, understanding factors associated with the presence and absence of injuries is vital. Studies investigating this internationally have been few and often presented mixed results. No study has been conducted in a South African setting to take into consideration local circumstances.

The thesis will thus consider if the policy, guidelines and training programme of the Department of Health has been successfully translated into programme delivery for survivors of rape, and an increase in conviction of rape cases.

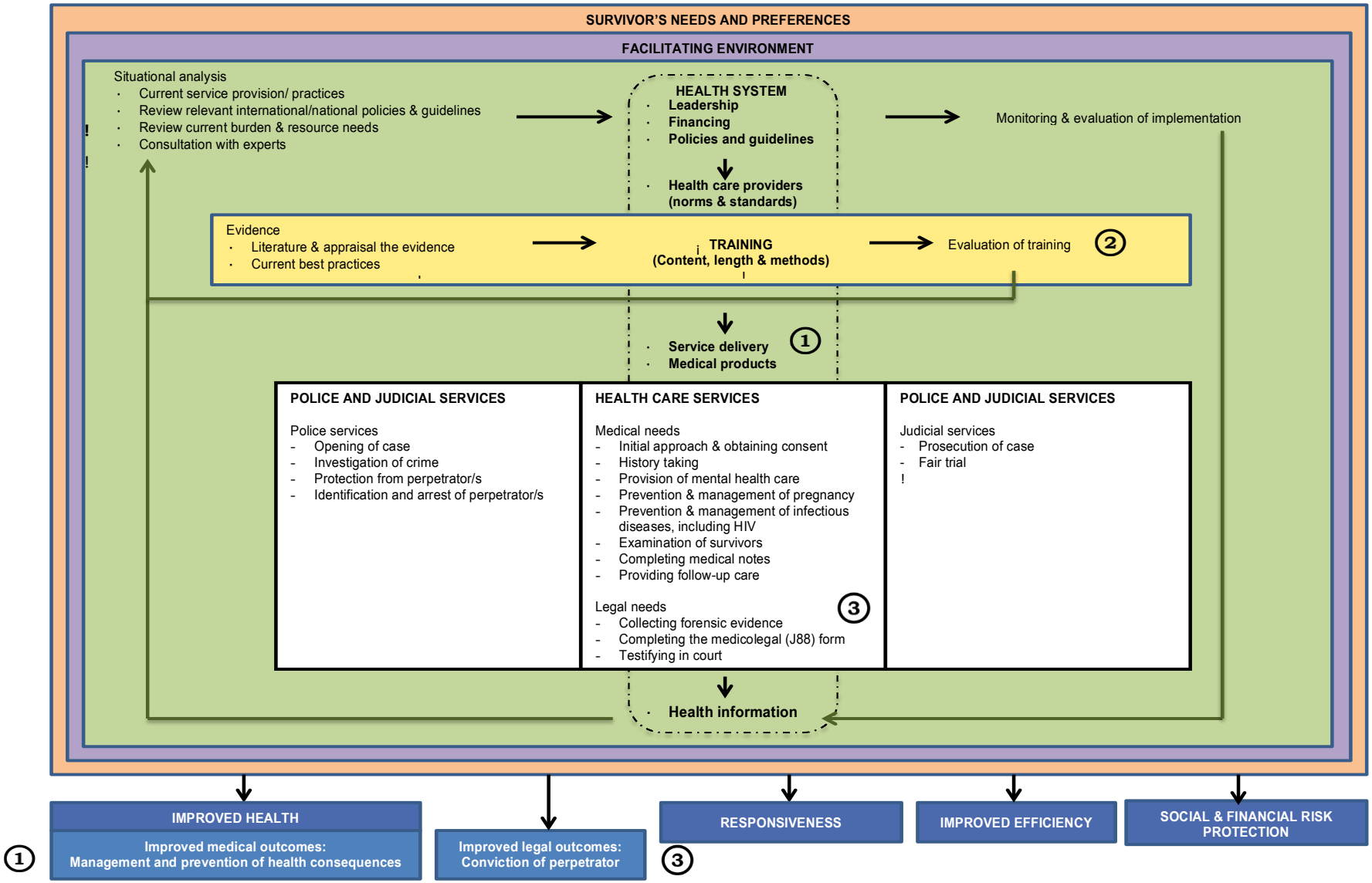

Figure 1. The establishment of post-rape care services based on evidence

Table 1. Health care system's framework of contributing factors that influence post-rape care services

LEVEL	CONTRIBUTING FACTORS
Personal Level **(Patient - Staff interaction)**	Staff: - Background - Experience - Attitude - Training - Burnout Patient: - Background - Experience - Personality and ability to negotiate through services Availability of resources
Unit level	Organization of services Location of services Unit appearance/Impression of unit Resource allocation Unit management: - Experience - Ethos of "unit management" - Training policy Staff: - Turnover - Relationships Documentation: - Unit policy regarding sexual assault care - Management guidelines
Facility level	Organization of services Location of services Facility appearance/Impression of facility Resource allocation Budget allocation Facility management - Experience - Ethos - Acceptability of interventions and programmes
Government level	Local and national Department of Health values Commitment to gender equity and to reducing rape and GBV Local and national policy Local and national management guidelines Local and national budget allocation Local resource allocation Monitoring and evaluation framework

9. AIMS AND OBJECTIVES

9.1. AIM

The overall aim of the PhD thesis is to strengthen the evidence base for post-rape care services in South Africa.

9.2. RESEARCH OBJECTIVES

The objectives of this PhD thesis are to generate knowledge on:

1. Whether health system interventions lead to improved health outcomes and service utilization for survivors of rape or IPV.
2. Whether the South African Department of Health's national post-rape care training curriculum deepens knowledge and confidence of health care providers who have been trained, and to understand which providers benefit most from training.
3. The prevalence and patterns of genito-anal injuries and the factors associated with the absence of these, as this would support the progression of rape cases through an improved interpretation of genito-anal injuries by health care providers in documentation and presentation when in court.

10. OVERVIEW OF THE THESIS

Chapter 1 has highlighted the fact that rape is a public health problem globally and in South Africa. An overview of government initiatives is presented yet the numerous on-going challenges in providing quality care are noted. The rationale for doing the study is presented and the various components of the thesis are detailed. A conceptual framework for establishing evidence-based post-rape care services is described noting the gaps that will be addressed with this thesis.

Chapter 2 presents literature on the epidemiology of rape globally and in South Africa, health consequences of rape including genito-anal injuries, models of post-rape and IPV care in low and

middle-income countries (LMIC), training of health care providers on post-rape care, and attrition of rape cases with a special focus on the influence of the health care system on this.

Chapter 3 describes the methodologies of five publications from three studies: a systematic review, a study based the national post-rape training programme in the country and a review of rape cases reported in Gauteng province. The fifth publication (Chapter 7) is an additional paper that provides insight to the final publication (Chapter 8). My role in the studies is presented in the project management section of each study.

For the findings of the thesis, three published and one unpublished article are presented as chapters and included as annexures.

In Chapter 4 findings from a systematic literature review that evaluated the effects of a post-rape or IPV model of care are presented. Outcomes that were considered included physical, psychological and reproductive health outcomes, rape and IPV recurrence, provision of related services, and referrals. Both rape and IPV models were included as a review of the literature found that these services were often combined or delivered by the same providers or point of care.

Chapters 5 and 6 present baseline and post-training findings on providers who attended the national training programme. This includes results on the levels of knowledge and confidence related to post-rape care, and the factors associated with these. The effect of the training on knowledge and confidence of providers in specific areas of post-rape care are also reported on.

Chapters 7 and 8 focuses on genito-anal injuries in rape survivors. Chapter 7 was included as an additional publication to support the thesis. I was a co-author of the publication and it provides evidence of the link between documented genito-anal injuries and rape case progression in the same study population as Chapter 8. Chapter 8 then documents in detail prevalence and patterns of genito-anal injuries, and the factors associated with the absence of injuries in women who reported rape in Gauteng province.

In Chapter 9, the findings of the thesis are discussed in relation to the aims and objectives, and gaps identified in national and international literature. Implications for post-rape care services are discussed and future research questions are proposed.

CHAPTER 2

LITERATURE REVIEW: WHAT DO WE KNOW?

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1. INTRODUCTION

This chapter provides the background for the thesis and presents an overview of the problem of rape: The epidemiology of rape with prevalence and patterns of rape cases internationally and in South Africa, the context of rape and risk factors for experiencing or perpetrating rape, followed by the health consequences of rape with more detail presented on the identification of genito-anal injuries, its prevalence after rape and factors associated with genito-anal injuries after rape. This is followed by a review of models of care for rape and IPV in LMIC, including South Africa. An overview of literature is then presented on post-rape care training for doctors and nurses internationally and in South Africa. The chapter ends with a discussion on the attrition of rape cases and the influence the health system and health care providers can have on reducing this.

2. EPIDEMIOLOGY OF RAPE

2.1. PREVALENCE AND PATTERNS OF RAPE CASES

2.1.1. Internationally

Measuring the prevalence of rape requires a clear definition for comparability. Rape is an act of violence that can be experienced by both men and women at all ages of life, and can be perpetrated by intimate partners or non-partners, which includes acquaintances, family members, friends or strangers. Data on rape is obtained from two main sources: Routine data and research studies. Routine data is limited by the legal definition of rape in each country, the degree of official reporting by survivors, and the quality of the statistics, maintained by police and health services in the country. Findings of research studies are often hard to compare, due to the use of

different methodologies, tools to interrogate experiences of sexual violence, varying sampling strategies and sometimes small and unrepresentative samples (88).

In an attempt to address these limitations, population-based multi-country studies using common methodologies and definitions have been conducted across the world such as the WHO's multi-country study on IPV, sexual violence by a non-partner and child sexual abuse (89), the International Violence Against Women Survey (90), the Gender, Culture and Alcohol Study (91), the European Union (EU) study on violence against women (92), the UN study on men and violence (93), and Demographic and Health Surveys. Together they provide data on the experience and perpetration of rape. A recent systematic review of the literature, which included the studies listed above, has provided a global population prevalence estimate of 7% for sexual violence by a non-partner in women 15 years and older using random effects meta-regression (14, 94). Prevalence ranged from 3% (95% CI 0% - 8%) in south Asia to 21% (95% CI 5% - 38%) for central sub-Saharan Africa (94). Prevalence estimates were also high for southern sub-Saharan Africa (17%, 95% CI 11% - 23%) and Australasia (16%, 95% CI 12% - 21%). The global prevalence of physical and/or sexual IPV ranged from 16% (95% CI 9% - 24%) for east Asia to 66% (95% CI 54% - 78%) for central sub-Saharan Africa, with an overall lifetime prevalence of 30% (95% CI 28% to 32%) for women aged 15 years and older (14, 95).

There is much less data available on rape or sexual violence by a partner as most studies present data on a combined prevalence of IPV, as different forms of violence often co-occur in intimate relationships. In addition, there are different reporting biases that affect reporting of IPV compared to non-partner rape. In the WHO's multi-country study, sexual coercion by a non-partner from the age of 15 years onwards ranged from 0.3% in Ethiopia to 12% in a city in Tanzania (89). In comparison, prevalence of sexual coercion by a partner was much higher ranging from 6% in a city in Japan to 59% contrastingly in Ethiopia. In the UN multi-country study conducted in Asia and the Pacific, 3 106 women between the ages of 18 and 49 years were interviewed in Cambodia, China, Papua New Guinea and Sri Lanka. Partner rape experiences ranged from 10% in Cambodia to 58% in a city of Papua New Guinea (96). No clear data were however presented on the experience of rape by a non-partner. Similarly, a study commissioned by the EU Agency for Fundamental Rights in the 28 EU member states collected data for the

experience of violence by a partner and non-partner but did not present separate results for this. In this study 11% of women reported that they experienced sexual violence since they were 15 years old, either by a partner or other person and 5% had been raped since the age of 15 years onwards (92).

Decker and colleagues (97) presented estimates for physical and sexual IPV amongst female adolescents (15 - 19 years) and young adults (20 - 24 years) based on data from Demographic and Health Surveys that were conducted in 30 LMIC between 2004 and 2011. The lowest prevalence of sexual partner violence was reported in Nigeria in 2008 with 3% in the 15 to 19 years age group and 4% in the 20 to 24 years age group. In contrast, 33% of 15 to 19 year olds and 31% of the 20 to 24 year olds in the Democratic Republic of Congo reported sexual partner violence. Overall, lifetime sexual IPV was estimated to be 12% and 11% in the adolescent and young adults, respectively.

Not much data is available from multi-country population-based studies on the experience of child sexual abuse and this has additional limitations in terms of recall. In the WHO multi-country study sexual abuse before the age of 15 years ranged from 1% in a province in Bangladesh to 21% in Namibia (89). Another study conducted in seven countries reported that the lifetime prevalence of any form of sexual violence before the age of 18 years ranged from 4% in Cambodia to 38% in Swaziland for females, and from 6% in Cambodia to 21% in Haiti for males (98). Data from other studies reported prevalence rates of sexual abuse in childhood between 3% in Paraguay to around 30% in Tanzania and Swaziland for females and between 8% in Switzerland to 37% for males in Bangladesh (99–104) .

As with statistics on the experience of rape, data on perpetration was also limited until a large study was conducted with over 10 000 men in nine sites in the Asia–Pacific region (93). In this study prevalence of rape perpetration was 11% (95% CI 10% - 12%) against non-partners and 24% (95% CI 23% - 26%) against partners. Non-partner single perpetrator rape ranged from 3% in rural Bangladesh to 27% in Papua New Guinea while multiple perpetrator rape ranged from 1% in urban Bangladesh to 14% again in Papua New Guinea. The prevalence of having raped a man was 3% across the entire Asia Pacific region. A similar study was conducted in cities of

five countries (Brazil, Chile, Croatia, India and Mexico) and nationally in Rwanda (105). In this study sexual violence perpetration ranged from 2% in Brazil to 24% in India, while sexual violence against a partner ranged from 1% in Brazil to 20% in India. The proportion of men who reported to have participated in gang rape was less than 1% in Brazil, India, Mexico and Rwanda and less than 2% in Chile and Croatia.

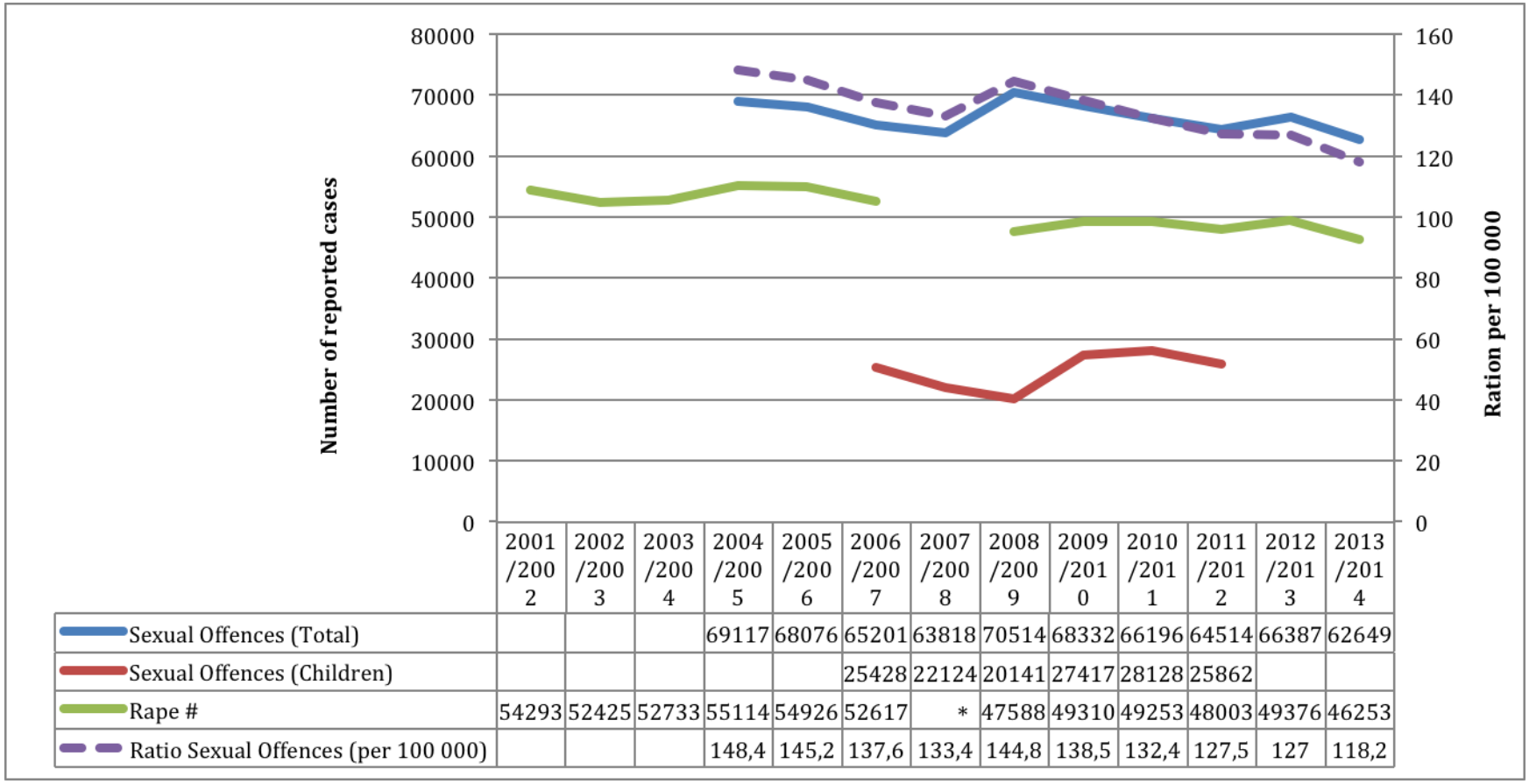
Overall, some countries or regions are noted to have generally high levels of violence as reported for partner and non-partner violence statistics, whereas others have low levels of non-partner violence juxtaposed with extremely high levels of partner violence. This was particularly noted based on the multi-country study data from Ethiopia (89). However, the consistently higher prevalence of sexual violence against a partner compared to a stranger in almost all of the countries was noticeable (89, 93, 105). In summary, prevalence rates for sexual IPV and non-partner sexual violence varies between and within regions and countries but is overall a significant problem (2).

2.1.2. South Africa

Statistics from officially reported cases to the police are often the most common source of rape prevalence data. Based on these figures, rape is a common occurrence in South Africa, with 46 253 cases reported to the police in 2013/14 (106). This included cases of compelled rape and acts of consensual sexual intercourse with children between the ages of 12 and 16 years. Since the changes that occurred to the legislation in 2007, the SAPS has not consistently presented statistics for rape alone, yet a substantial drop in the number of reported cases has been noted in the period from 2008/9 to 2013/14 compared to data that was reported from 2001/2 to 2006/7 (Figure 2) (107). The number of sexual offences cases have remained between 60 000 and 70 000 over the last 10 years with a decline from 69 117 in 2004/5 (108) to 62 649 in 2013/14 (107) as well as a drop in the ratio from 148/100 000 population to 118/100 000 population, respectively. However, a slight increase of 2% is noted in sexual offences amongst children, although data is only available from 2006/7 to 2011/12. In the 2011/12 SAPS Annual Report, detailed data of the number of rape cases by age was presented for children (Figure 3) but this was not done in other years (107). As seen in Figure 3, the number of cases increased steadily

from the age of 3 years where approximately 500 cases were reported, with a peak at the age of 16 years, with over 2 500 cases reported. No SAPS data is available on the gender of survivors.

A major concern in presenting the frequency of rape cases in a country and comparing it against other countries is apparent when one considers the scope, variation and change in the legal definition of rape. This however does reflect in most part the number of survivors who receive health care as they are brought into the facilities by the police. Still, the actual number of rape cases that occur annually is unknown. Research conducted in communities provides evidence of a large unmet need as many survivors do not report to the police or access health care (109). Based on four community-based studies the average number of women who reported rape to the police was estimated to be 6 in 25 (47, 110–112) with 25% of women experiencing sexual violence in their lifetime, although the studies included different biases as methodologies and measurements of rape varied. In studies conducted with men an average of 29% reported perpetrating some form of sexual violence against females (110, 113, 114).



	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Sexual Offences (Total)				69117	68076	65201	63818	70514	68332	66196	64514	66387	62649
Sexual Offences (Children)						25428	22124	20141	27417	28128	25862		
Rape #	54293	52425	52733	55114	54926	52617	*	47588	49310	49253	48003	49376	46253
Ratio Sexual Offences (per 100 000)				148,4	145,2	137,6	133,4	144,8	138,5	132,4	127,5	127	118,2

Data from 2008/2009 – 2013/2014 includes cases of rape, compelled rape and acts of consensual sexual intercourse with certain children between the ages of 12 and 16 years

* Unable to obtain data on the number of reported rapes in 2007/2008 as data are only presented for April to December in the SAPS Annual Report 2007/2008 (115)

Source: South Africa Police Services (107, 116)

Figure 2. Number of rapes and sexual offences reported to the police in South Africa (2001/2002 – 2013/2014)

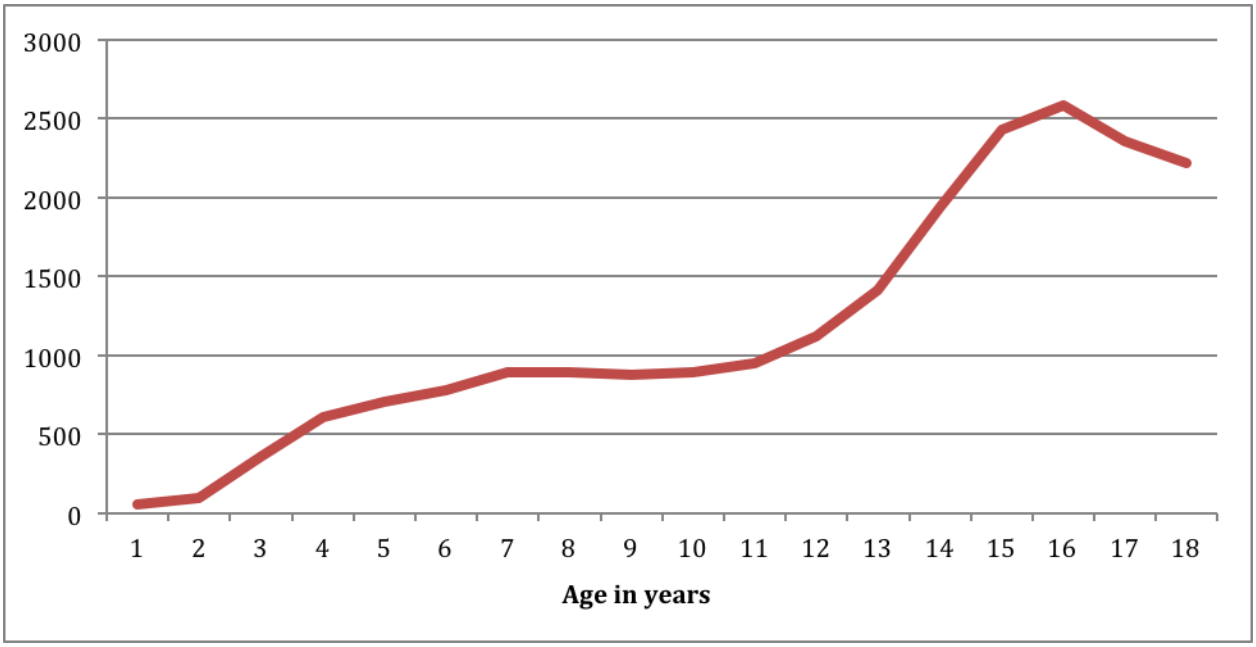


Figure 3. Number of rapes reported to the police in South Africa by age of child survivor (2011/12)

There is minimal data available on rape within marginalised groups (e.g. lesbians, sex workers, or disabled) and in men. In a study conducted in 2003 with lesbian and gay people in Gauteng, 7% reported having been sexually abused or raped in the past year (117) while 31% of lesbian women in Botswana, Namibia, South Africa and Zimbabwe reported that they were forced to have sex in their lifetime in a study conducted in 2010 (118). In terms of male rape, a study in KwaZulu-Natal (KZN) and the Eastern Cape found that 5% of men had raped other men or boys and 19% reported having being forced to have sex with another man (119). With regard to rape cases that involve survivors with intellectual disability, a figure of 2% was presented in the study that was conducted in Gauteng (78). However, it is expected that many of the actual cases are missed due to substantial underreporting.

In 2003, a detailed analysis of reported cases in Gauteng has provided an overview on the pattern of rape cases in this province. Sixty percent of the reported cases occurred in adults, while 25% occurred in girls aged 12 to 17 years and 15% occurred in children less than 12 years of age (78). Adult survivors were more likely to be raped by a stranger compared to girls (48% vs. 15%), and 19% of adults were raped by a current or former partner. In contrast, 43% of adolescents and 52% of younger girls (less than 12 years of age) were raped by someone they knew (i.e. friends,

acquaintances or neighbours). In young girls (less than 12 years of age), 16% suffered from repeated or chronic abuse.

Adult women were most often attacked while outdoors, especially when walking, whereas the perpetrator's home was the scene of the crime in most rape cases involving adolescents (40%), while younger girls were most often raped in their own homes (29%). Perpetrators were also more likely to be armed when they raped adult women (41%) compared to girls (5%), and 70% of adult women had some form of bodily force used against them. A smaller proportion of adolescents (36%) and younger girls (19%) were threatened with either death or injury. In young girls of less than 12 years of age the rape was more often recognised by symptoms or behavioural changes.

South Africa has a particularly violent history during the apartheid regimen with both formal and informal military structures encouraging a militarised community while violence seeped civil and police action at the time. There were poor attitudes to the law, policing and the criminal justice system as most were consistent with the unjust system. It is therefore no surprising that rape in South Africa has been reported to be notably more violent than in most countries (76). Gang rape is common with 16% of reported rape cases reviewed in Gauteng, including multiple perpetrators (120) and 7% of men from the province reported multiple perpetrator rape (110). In addition, in a sample of volunteers from the Eastern Cape, 14% of young men aged 15 to 26 years reported multiple perpetrator rape (114), and 20% of men in the community reported that they had either been involved in a gang rape or were present when one was committed (119). These numbers are higher than those reported in other countries (93, 105).

In the most extreme form rape occurs with murder - either as sexualised murder or very violent rape. A study conducted in a nationally representative sample of mortuaries in South Africa reported a rape homicide rate of 3.7/100 000 for women aged 14 years and older in 1999 and 2.5/100 000 in 2009 (121). This was ten times higher than the most comparable figures reported from the USA (122) and three times higher than a study conducted in Jamaica (123). Sexual assault was suspected in 10% of the child homicides in 2009, but was much more common in

girls with sexual assault suspected in 86% to 92% of female victims over the age of 10 years (124).

2.2. CONTEXT AND RISK FACTORS FOR RAPE IN SOUTH AFRICA

Research has been done to understand the individual, familial and social factors that make women more vulnerable to rape but more importantly, factors that increase the risk of men perpetrating rape. These factors include biological factors in terms of genotypes and neurological deficits, childhood and family life including experience of neglect or abuse, living situations, parental IPV and poverty and social circumstances, mental health, peer pressure and delinquency, gender inequitable ideas and practices, sexuality and sexual practices, substance abuse, and firearm usage (125). Younger women and those in poverty are found to be more vulnerable to sexual abuse (109). Poverty plays a role in a multitude of ways, either directly through actions that place women at risk, e.g. participating in transactional sex, or indirectly through daily routines, such as walking to work, put women at risk for sexual abuse. Women in financial need may also find it difficult to negotiate in circumstances when they are dependent on resources from the perpetrator. Furthermore, alcohol and other substance use are strongly associated with violence, including rape. In addition, women and children who have been previously raped are at a greater risk of experiencing IPV and non-partner rape later in life (126, 127).

Local and international research has found that gender power inequalities play a major role in the perpetration of rape with men wanting to display their power over women (109). Men feel a strong ownership over women especially in marriage. Status with male peers is also important and it has been reported to strengthen bonds in South African men who participate in gang rape. The perpetration of gang rape, also called “jackrolling” or “streamlining” in South Africa has been used to punish a partner for suspected infidelity or a woman who refused an offer of sex or love, as trickery to “share a girlfriend” with friends, or just for fun (128, 129). We also see a societal tolerance to violence in general in the country, with subsequently high levels of interpersonal violence including rape while on the other hand there is a stigma associated with having being raped (109).

In a study conducted with men in the Eastern Cape and KZN, childhood trauma, having being raped by a man, having a mother who at least completed school, having more sexual partners, ever having had transactional sex, perpetrating physical IPV, using drugs in the past year, ever being part of a gang, feeling that life circumstances are less good compared to peers, and egocentrality and externalization of blame were found to be significantly associated with the perpetration of any form of rape (i.e. partner, non-partner, gang or rape of a girl less than 15 years of age) while men with a more gender equitable attitude were found to have a lower odds of perpetrating rape (130). Having a mother who at least completed school was considered to be a marker of power in the context of poverty, which is linked to the feeling of entitlement. As such, sexual entitlement was the strongest motivation for perpetrating any form of rape (130).

3. HEALTH CONSEQUENCES OF RAPE

There is a complex relationship between the occurrence of rape and health consequences with multiple overlapping intermediate pathways. Numerous articles and reports have been published on the health consequences of rape (14, 89, 131, 132), but more so on IPV. However, there is often much overlap in the experience of violence by type or perpetrator (126) with similar consequences on health, although some consequences, such as post-traumatic stress disorder (PTSD), are found to be more strongly associated with specific forms of violence (133–135).

Survivors of rape can experience both immediate and medium to long-term health consequences. More urgent needs following a rape include the management of physical and genito-anal injuries, and the prevention of future health consequences, such as unwanted pregnancies, STIs including hepatitis B and HIV (136). Managing the patient's health takes precedence over the legal requirements of collecting evidence when her life is at risk but where possible, both should be done concurrently. Providing comprehensive medical care is essential. Adherence to treatment, especially PEP, can be supported through adequate counselling and an understanding of the survivor's living circumstances and challenges. Concrete plans for follow-up should be made during the care process on how to support the survivor's mental health during the weeks and months that follow.

Future health consequences can occur due to either direct or indirect routes (14). For example, unintended pregnancies could occur as a result of the rape itself or due to risky sexual practices that the survivor may adopt. Similarly, there are multiple pathways between rape and HIV infection, with the most direct pathway being HIV transmission during the rape act (137). Indirect routes occur through participation in high-risk behaviours, such as infrequent condom use, multiple (concurrent) sexual partners, risky sexual partners, sex while intoxicated or under the influence of drugs, or participating in transactional sex (138–142). Negotiating for safer sex practices is also found to be a challenge for survivors of rape and IPV (143). Other unhealthy behaviours seen in survivors are increased smoking, heavy alcohol use, illicit drug use, and eating disorders, such as anorexia and overeating (14, 144). Many of these behaviours can result in re-victimisation of the survivor (145, 146).

Physical health consequences that can present itself later or persist over time include gastrointestinal disorders such as irritable bowel syndrome, nausea, vomiting, and bloatedness, cardiopulmonary symptoms, such as chest pain, palpitations, shortness of breath, asthma, and hyperventilation, and neurologic symptoms of numbness, faintness, fatigue, chronic pain, migraines and fibromyalgia (131, 144, 146–149). Gynaecological concerns include chronic pelvic pain, dysmenorrhea, fistulae as a result of injuries, pelvic inflammatory disease, and infertility (150–152). In addition, maintaining healthy sexual relationships can be difficult when survivors lack sexual pleasure and have dyspareunia (151). Moreover, psychological stress and fear that may arise from the rape experience can change the manner in which survivors manage sexual and reproductive health with consensual partners. Ultimately, all of these can lead to poor maternal and perinatal outcomes for her and her offspring (131).

Psychological symptoms usually peak at 3 weeks after the rape experience although they can persist for 1 or 2 months. However, after this period, some women may continue to experience panic disorders, phobias, anxiety, depression and suicidal tendencies (14, 133, 153–155). Post-traumatic symptoms have been reported in survivors from immediately after the rape up to one year later (156). The lifetime prevalence of PTSD has been found to be the highest in rape survivors compared to other groups of trauma survivors (133–135). Suicidal tendencies are a

danger from the start, and remain a life-long risk, depending on the survivor's long-term mental health and coping mechanisms (157–159).

As with risk factors for rape, social and economic factors are intertwined with the consequences of rape. Health consequences can be influenced by the way intimate partners, family, health care providers and society in general view rape and whether there is stigma associated with it (131). In some countries survivors are considered unfit for marriage and could be married to the perpetrator to resolve this problem or killed in an honour killing. Rape affects the fabric of society and breaks down trust related to safety and security, while placing an increased burden on the health and criminal justice system.

Overall, survivors have a poor prognosis of health and although they often seek health care, the underlying cause of ill health are not always identified or adequately managed (160, 161). Similarly, they fail to receive the full ambit of preventive and therapeutic health care (131, 162). Health services have to be directed to not only the short-term health needs of the survivor but also prevent and treat long-term health outcomes.

3.1. GENITO-ANAL INJURIES

Literature in the field has shown that the injuries have a significant effect on rape cases (82). The presence of injuries in a rape survivor can influence her decision to officially report the incident and to access services (163–166). It has also been shown to affect the ease with which she is able to access those services or obtain treatment (167). It provides evidence supporting the survivor's testimony and thus also plays a significant role in the final outcome of obtaining a conviction if the case is reported (87, 166, 168, 169). As there is still a strong belief that rape is violent in the majority of cases and that there is much resistance from the survivor in "real" rapes, the common perception is that rape is associated with injuries and that in reverse, injuries provide proof that rape occurred (170, 171). This view is not only limited to the general community but still permeates in the health, police and judicial system (76). This is further played out in the media and news reporting, creating a mind-set regarding the "typical rape scenario".

Some work has been done to change this perception. Research on the prevalence of injuries after rape has shown that not all survivors present with injuries and that a proportion of women have injuries after consensual intercourse (172–177). However, examination techniques have evolved over the years, increasing the ability to detect injuries. The most common additions to the examination procedure are the use of toluidine blue dye and the colposcopy, which will be explained in more detail in the following paragraphs. In some studies almost all rape survivors examined with these techniques have had injuries noted on examination.

Toluidine blue dye is a 1% aqueous solution that stains when it binds with cells that have a nucleus. As the surface layer of the skin contains no nuclei, the dye highlights damage in the deeper dermis. This could be as a result of injuries and inflammation due to benign or malignant disease (178, 179). In the latter, the dye will produce a diffuse patchy uptake, while in trauma it will have a linear distribution. This can be used to identify recent genito-anal injuries. It is important to note that the dye does not distinguish between consensual and rape-related injuries (180, 181). Therefore, a positive toluidine blue test would support but not provide conclusive evidence of non-consensual intercourse (182).

In the early 1980s, paediatricians in the USA began to use colposcopies, which were previously used in the diagnosis and management of cervical cancer, to detect microtrauma in child survivors. Although colposcopies were originally used in paediatric cases, they are also now commonly used in adult rape cases to identify minor injuries (183). Issues regarding consent are of importance in adults and colposcopy examinations do not assist in the differentiation between injuries due to consensual versus non-consensual sexual intercourse (184–186). Photographs can also be misinterpreted and are affected by various factors, such as distortions, lighting and quality of equipment. In a study conducted with one registrar, two experienced senior forensic pathologists and one senior gynaecologist with extensive clinical experience, inter-observer agreement on a review of 316 photographs was found to be between 58% and 80%, indicating poor reliability in the interpretation of colposcopy photographs for adult women (187).

Detection rates for genital injuries are increased immensely with the use of toluidine blue dye and colposcopies. In children from birth to 17 years of age, injury detection rates after

colposcopy examination increased by 11%, while an increase of 24% was noted in adults (from 36% to 60%) (188). A dramatic increase in injury detection was noted in one study where 6% of survivors were reported to have injuries on visualisation alone compared to 53% with colposcopy examination (189). Another study found a 7% increase in detection after the use of either colposcopy or toluidine blue dye (from 26% to 33%) (176). A study in females between 13 and 74 years of age found that 43% of survivors had injuries on direct visualization alone, 66% had injuries after the use of toluidine blue dye and a further 2% of injuries were noted with colposcopy examination thereafter (190).

Of concern though, with the focus on special examination techniques to identify the smallest of injuries, is that it places an emphasis on the existence of injuries that may perpetuate the misconception that a lack of injuries implies that rape did not occur (82, 191). There are thus potential unintended consequences for adult survivors who have no demonstrable injuries found on colposcopy examination (82). There is a definite risk of doubting the woman's history in these cases and women would also get an impression that they must be injured for their case to be considered (191, 192). Others have also commented on the technologies being invasive and potentially humiliating resulting in "secondary victimisation" (191). On the other hand, being able to view the injuries during the examination and having photographic proof of this may influence a woman's decision to report the rape.

Two primary issues in rape cases are identification and consent. The SAECK assists with identification through the collection of evidence for DNA testing, while toluidine blue dye and colposcopy increases the probability of identifying injuries, therefore implying that the intercourse was forced or at least that there was resistance by the survivor, does however not yet assist with the issue of consent. Authors have implied that it could assist if enough research is done to identify if there are specific patterns in the severity and location of injuries with consensual versus forced sexual intercourse (82). I am, however, very hesitant to agree with this notion.

3.1.1. Prevalence of genito-anal injuries after rape

When reviewing injury rates reported in studies, one should always consider the manner in which injuries are defined, the age range of the study population, the way in which the examination was conducted, whether special examination techniques were used, and the time period between the incident and examination (193). A large number of publications have been published on the prevalence of genito-anal injuries and a global review that assessed the impact of reporting injuries on legal outcomes reported genito-anal injuries in 9 to 67% of cases (167). In a recent publication current best practice guidelines for examination from the USA, UK and Republic of Ireland were applied to studies containing genito-anal injury prevalence data to develop comparable figures for different examination techniques (194). Where examinations were conducted with direct visualization alone, the mean prevalence was 28% (range 21% - 44%), where examinations were done with a colposcopy alone the mean prevalence was 52% (28% - 68%) and when a colposcopy and toluidine blue dye staining were used, the mean prevalence 58% (32% - 87%). In all of the publications, the examinations were conducted in a specialized centre with examination by a forensically trained provider.

In children, studies have often included both boys and girls, and very few studies presented data for girls alone. Where data for boys and girls were combined, genito-anal injury prevalence ranged from 20% to 77%, while prevalence for girls alone has been between 23% and 27% (77, 195–202). Five of these studies were conducted in Red Cross Hospital in South Africa. Here genito-anal injury prevalence for boys and girls combined ranged from 45% to 77% (77, 195–197), with a breakdown by type and location of injury being presented in one publication that reported on findings in 126 girls less than 13 years of age that were examined between 1978 and 1989 (203). Injuries ranged from 7% for bruising on the hymen to 47% for a tear of the posterior fourchette. The next most prevalent injuries were tears of the hymen (36%) and periurethral bruising (20%).

There are only a few studies that clearly present data on injury prevalence in adolescents. Seventy-nine percent of female survivors between the ages of 14 and 19 years of age had genital injuries in one study (204, 205), 83% of survivors between the ages of 13 and 17 had injuries

recorded in another study when compared to 64% of adult survivors older than 17 years of age (206), and 66% of survivors aged between 14 to 21 years had genital injuries reported compared to 59% of young adults aged 22 to 29 years of age in a third study (207, 208). Five studies were found that considered the presence of injuries in an older population (from around 48 years of age) where injury prevalence ranged from 37% to 85% (209–213).

The vast majority of studies included adolescent and adult survivors in the sample population or included survivors of a wide age range. In these studies the injury prevalence varied substantially from 10% to 81% (172–177, 180, 185, 188–190, 206–208, 214–243). One of the cited studies was conducted in South Africa in a district hospital in Gauteng province over a three-month period in 1982 (232). Here 42% of the survivors aged between 1 to 69 years of age sustained genital injuries. Two other studies that were based at the Karl Bremmer Rape Centre in Cape Town in 2005 and 2007/2008 reported an injury prevalence of 35% and 32% respectively (238, 240). In the remaining international studies where it was difficult to establish the age range, the proportion of survivors with genito-anal injuries was between 16% and 87% (184, 193, 244–249).

In summary, injury prevalence internationally ranged from 10% to 87%, with a range of 32% to 42% for studies conducted in South Africa (232, 238, 240). The availability of colposcopies and toluidine blue dye is limited to a few specialized centres in the country. For children five studies were published from one site but clear data for girls was not available (77, 195–197, 203). No genito-anal injury prevalence data are available for the adolescents and older female survivors in the South African setting. In rape homicides, genito-anal injuries have been reported in 19% to 56% of victims although in the latter study all autopsies in Cape Town were conducted by one forensic pathologist with an interest in the field, while in the former data were collected from a nationally representative sample of state mortuaries (121, 250).

3.1.2. Factors associated with genito-anal injuries after rape

Some researchers have extended their prevalence research to also identify factors associated with the presence of genito-anal injuries. Variables that have been considered in such analyses and a summary of the findings are presented in Table 2. However, these studies are plagued by the

same limitations as noted for prevalence data, such as small sample sizes. In addition, a number of studies only used bivariate analysis and thus did not adjust for other important variables. The hypothesis or theories for testing some of the variables were also not clear.

Table 2. Factors associated with the presence of genito-anal injuries*

Survivor characteristics	
Age	Eight out of 14 studies showed no association with age (174, 175, 204, 207, 213, 222, 247, 251). One study reported that mean age was greater in patients with injuries but this was marginally significant (13.4 vs. 12.7 years) (221). Another study reported a greater odds of having injuries in survivors between the ages of 12 to 19 years, and in survivors older than 50 years, when compared to survivors aged between 20 to 49 years (223). Similar findings were reported where the prevalence of injuries was greater in adolescents compared to adults (83% vs. 64%) (206). In contrast, a fourth publication reported a greater odds of injuries in survivors 45 years or older compared to women aged 12 to 24 years (Odds ratio (OR) 2.1, 95% CI 1.4 - 3.2) (215). Almost the same results were reported for women 40 years and older who had significantly more injuries than women between 14 and 19 years of age (OR 5.6, 95% CI 1.6 – 20.2) (227). In a study conducted by Sugar et al (229), survivors between 20 to 29 years of age (OR 0.5, 95% 0.3 – 0.8), 30 to 39 years of age (OR 0.4, 95% CI 0.2 – 0.6), and 40 to 49 years of age (OR 0.3, 95% CI 0.2 – 0.7) had less odds of genito-anal injuries than survivors between the ages of 15 and 19 years.
Menarche	One study that was conducted in children found that injuries were more likely to be present among menarchal than premenarchal girls (30% vs. 8%, OR 2.1, 95% CI 1.2, 3.6) (202) and two other studies showed no association with Tanner staging (204, 221).
Menopause	Linked to the findings on age above, four out of five studies found an association between survivors who were menopausal and the presence of genito-anal injuries compared to pre-menopausal survivors (209–212). One study reported no association (175).
Race	Eight out of 10 studies reported no association between race and the presence of genito-anal injuries (175, 206, 208, 210, 224, 241, 247, 251), while two studies showed an association between being a White survivor and the presence of genito-anal injuries (213, 245) compared to Black/African survivors.
Educational status	In two studies college graduates had significantly more injuries than high school graduates (222, 247). In addition, in the one study survivors who had less than high school education were found to have less injuries than those who were high school graduates (247) but this was not found in the second study (222).
Marital status	Two studies reported no association (222, 247).
Previous sexual experience	Seven out of 10 studies reported a significant association between the survivor not having previous sexual experience and the genito-anal injuries (216, 222, 223, 226, 229, 236, 251). In three other studies, no significant association was found with all injuries, but an association was reported with hymenal injuries (204, 205, 252).

Parity	Two out of three studies reported no association with parity (175, 226), whereas one study reported fewer injuries in survivors who had delivered two or more children (222). Another study found fewer injuries in survivors who were pregnant compared to those who were not (239).
Previous experience of violence	Four studies reported no association between previous sexual assault history and genito-anal injuries (206, 210, 224, 241), while one study found that survivors who were involved in fights previously had a higher prevalence of injuries (253).
Alcohol/ Drug use	Eleven out of 12 articles found no association between the use of alcohol and/or drugs and genito-anal injuries (204, 206, 210, 215, 223, 224, 226, 229, 241, 247, 251). One article found more injuries in survivors who had used alcohol (OR 1.3, 95% CI 1.0 - 1.5) but no association was found with drug usage (222).
Medical conditions/ Medicine/ Use of products	Two studies reported no association on the use of lubricants and genito-anal injuries (174, 247), and two other studies found no association with the use of condoms (174). One study reported that patients who were using oral or injected contraception had less genital injuries (OR 2.0, 95% CI 0.9 – 4.6, p value < 0.10) (226). In terms of mental health, one study found no association between psychiatric disorders and the presence of genito-anal injuries (229) while another study reported no association with the use of antidepressants (226). Tampon use was significantly associated with more vulval injuries and less hymenal injuries in one study (252) yet found not to be associated in another study (174). Laboratory evidence of genital infection was also not found to be associated with the presence of injuries in one study (174).
Assault characteristics	
Relationship with perpetrator	In seven out of 11 studies there was no association between the relationship of the survivor and the perpetrator and genito-anal injuries (252). In one study this was only true for adult survivors whereas in children, assault by a stranger was associated with more injuries (245). In another study, when further analysis was done, assault by a stranger was associated with more anal injuries (21% vs. 14%) and fewer hymenal injuries (28% vs. 37%) (224). A lower odds of injuries was also reported with known assailants (OR 0.4, 95% CI 0.2 - 0.9) in another study (227). Yet, in contrast, two studies reported that there were significantly more injuries in survivors who were assaulted by known perpetrators (175, 226). Similarly, Möller et al. found no association with genital injuries, but intimate partner (OR 9.3, 95% CI 1.2 - 50) and acquaintance (OR 7.5, 95% CI 1.0 - 56) assault had a greater odds of anal injuries when compared to stranger assault (242).
Number of perpetrators	In all six studies there was no association reported (206, 210, 223, 224, 227, 229).
Location of the assault	In three studies there was no association noted between the location of the assault and injuries (223, 226, 229), whereas one study reported significantly less injuries when assaults occurred outdoors (215).
Time of assault	There were two studies that reported no association between the time of day and the presence of injuries (223, 247), and one study that reported no association between the day of the week and injuries (247).
Penetration	There were four studies that looked at whether penetration was associated with the presence of genito-anal injuries. In two studies vaginal penetration (199, 222) and

	penetration with a finger (174, 222) was associated with injuries. In another study, penetration with an object was associated with injuries (222). One study reported no association (247) while another reported no association when penetration with a penis was compared to penetration not by a penis (174). Only one study reported on oral penetration and here also no association was found with genito-anal injuries (229).
Anal penetration	Linked to the variable above, all eight studies that looked at anal penetration and injuries reported a significant association (199, 204, 205, 222, 223, 229, 247, 251).
Position during assault	Two studies that tested this found no association between the position during assault and genito-anal injuries (175, 247).
Violence during assault	Four studies reported that physical assault during the rape was not associated with the presence of genito-anal injuries (223, 229, 247, 251).
Threats of violence	One study found a significant association between threats and the presence of injuries (227).
Presence of a weapon	Four studies reported that the presence of a weapon was not associated with genito-anal injuries (213, 222, 227, 229).
Resistance by survivor	In one study physical/verbal resistance was associated with genital injuries when compared to passive resistance or no resistance (247), whereas a second study found no association between verbal resistance and injuries (215).
Non-genital injury	Six out of seven studies reported an association between the presence of non-genital injuries and genito-anal injuries (204, 205, 215, 227, 229, 251), whereas one did not (223).
Loss of consciousness	Two articles reported no association between the loss of consciousness and the presence of genito-anal injuries (222, 247).
Examination characteristics	
Bath after assault	One study reported that survivors who had a bath after an assault had less genito-anal injuries recorded (199).
Time between assault and examination	Twelve out of 21 studies found more injuries when survivors were examined closer to the time of assault, but the category of time varied from 24 hours to 72 hours (185, 199, 204, 205, 221, 222, 226, 229, 233, 242, 247, 251). In the remaining 9 studies, no association was found (175, 176, 206, 210, 213, 223, 224, 233, 241).
Examiner	One study reported no association between sex of examiner and genito-anal injuries recorded (228). Two studies reported that examiners with less experience recorded more genito-anal injuries (199, 228), but the problem with a high rate of false positives in those less experienced was noted in the one article.

* Only data related to genito-anal injuries are presented and where associations are reported, these were reported to be significant in the study based on a significance level selected by the authors. Where it is reported that there are no associations, this was tested and found to be not significant by the authors based on their significance level in the publication.

Injury prevalence and factors associated with it vary considerably across studies and areas. This is in part difficult to compare due to various differences in the study designs, but most importantly there is no consistent means by which injuries are defined and presented, including a

lack of knowledge on injury interpretation (254). Health care providers, as forensically trained, record all clinical signs that survivors present with, yet the relevance especially in the legal field for some (e.g. redness in the genital area) are questionable, and as such they have been excluded from injury prevalence data in certain studies. An injury classification system that includes a severity score, anatomic location and injury type, which is relevant to the health care setting and criminal justice system, has been proposed (255). It would be interesting to see if the research and clinical fraternity will adopt this system if it is found to be valid and reliable in post-rape examinations.

A classification system for child sexual assault has been developed, but of concern to experts is whether health care providers with basic skills are able to identify between normal and abnormal genital findings, where distinctions can be quite subtle and require examination in various positions (256). Misclassification of normal genital variations as abnormal findings by junior or untrained providers is a potential problem. A number of studies have reported on poor knowledge in all health care providers on the genital anatomy in children (257–259) - the hymen was correctly identified by only 59% to 62% of family practitioners, paediatricians, emergency department physicians and paediatric nurse practitioners, and the vaginal opening by 58% to 60% of the sample population (257–259). Physicians and paediatricians who were more experienced (i.e. who had performed a higher total number of child sexual abuse examinations, had testified in more cases, and who conducted a greater number of examinations per month), and examiners who regularly reviewed cases with an expert and who kept up to date with current research were found to be more knowledgeable on anatomy and interpreted photographs and documentation more consistently than less experienced doctors (258, 260, 261).

4. MODELS OF POST-RAPE CARE AND IPV SERVICES, AND INTERVENTIONS TO IMPROVE SERVICE DELIVERY IN LOW AND MIDDLE INCOME-COUNTRIES INCLUDING SOUTH AFRICA

When planning a model for post-rape or IPV care the following dimensions have to be considered (Figure 4):

- Access: At which level of care will the service be provided and within which level/facility? Where would the service be delivered? Which providers are best suited to deliver the services so that the service is more acceptable to survivors?
- Cost: What will be the cost of delivering the service and who will bear the burden of that cost? Will the service be free with expenses covered by the state through various possible means, or will there be a fee for service? Will the fee be paid for by the survivor, NGOs or through private insurance? If kept within the state, the budgets of which departments will provide for the service (i.e. health, police, justice) or will a special grant or provision be available?
- Sustainability: Is the model sustainable in terms of staffing requirements, workloads, equipment, medicine needs, and acceptability by survivors, all related service providers and the community in general?
- Comprehensive care: What care should be included in the package of service? Will provision be made for acute and chronic health needs? Should post-rape care be linked to other care, e.g. IPV care? Should other related services be included in the model (e.g. police, legal, social welfare)?
- Integration: Will the public sector, NGOs or private sector provide the service or will there be a combination of service providers? Will service providers, both within the health system and externally work collaboratively to deliver the service? Will all related services be delivered directly or will there be a need for referral to external sources? Will the model ultimately reduce the number of contacts a survivor has to make to obtain assistance?

Focusing on models of care and studies that have attempted to improve the delivery of post-rape care in LMIC provides valuable information and these would probably be the models most replicable in the South African setting. In addition, expanding this review to include services for IPV is necessary, as many countries have merged these services. Of the models of care that were presented in the literature, some were conducted in only one or a few institutions while others are implemented more widely, in more than one institution or even across a country. Very few models focus on post-rape care alone while quite a number have addressed violence against women or GBV. Yet, in many of these, the provision of care in relation to rape is not

specifically described. It should be noted that there were few programmes that had been evaluated systematically and few studies describe the circumstances that influenced the integration of services (262). Furthermore, most of the documents include research studies or publications by NGOs or research units, as governments seldom described their models of care in formal documents which are easily available online.

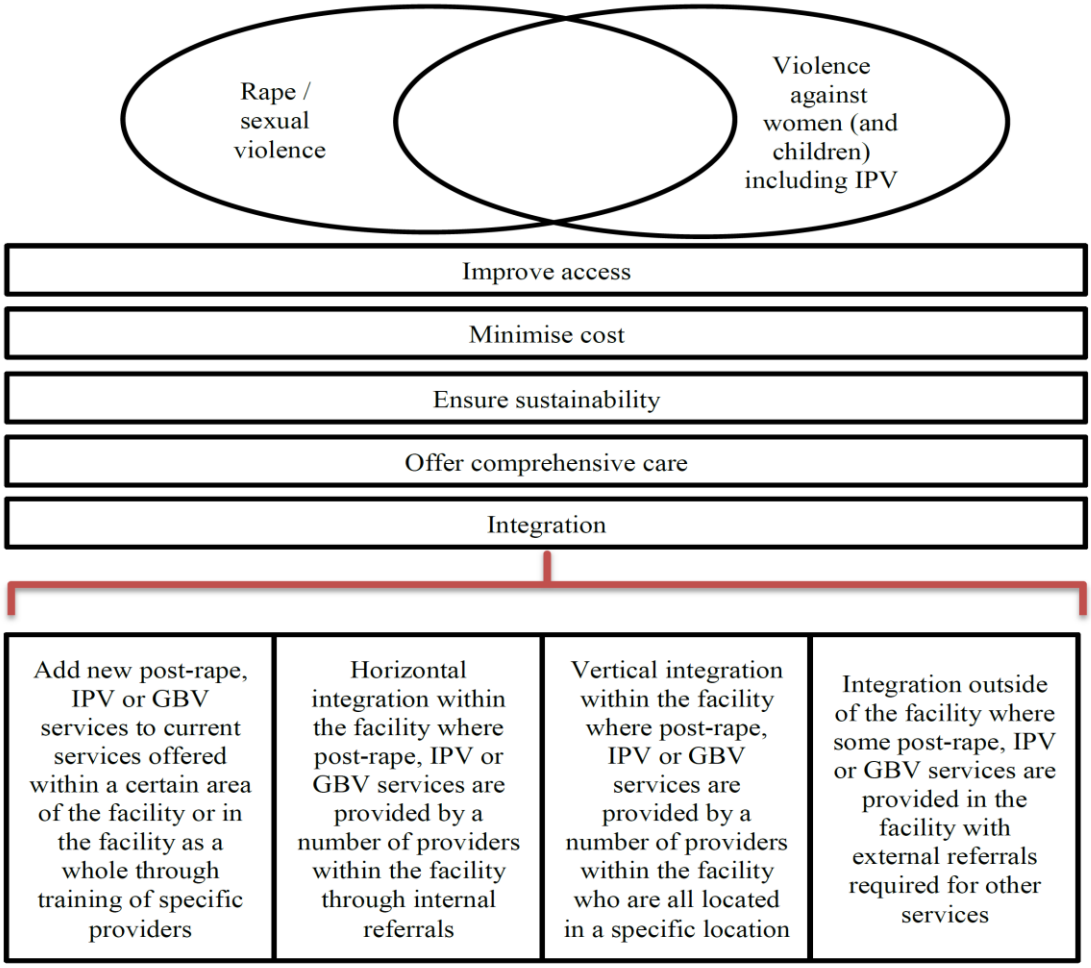


Figure 4. Integrated model for post-rape care and IPV services

4.1.1. CONFINED INTERVENTIONS OR PROVIDER-LEVEL INTEGRATION

In Venezuela, the Dominican Republic and Mexico, efforts were made to incorporate GBV services into reproductive health services offered by NGOs (2, 263, 264). These included the development of local guidelines, training of staff, and development of resources for both providers and survivors. Although some improvements were reported in very brief evaluations

of the projects in relation to provider beliefs and the number of providers trained, the projects still reported on challenges, including confidentiality, high workloads and no changes in screening practices by some providers.

In Sri Lanka, NGOs attempted two models for delivering GBV services in government hospitals (265). This included the establishment of help desks in five hospitals, and the inclusion of screening with referral to the NGO in the antenatal and gynaecology clinics in another hospital. However, the first model was dependent on funding for sustainability and was also limited to providing counselling and legal advice, while the latter failed once the project was completed, as the hospital staff did not continue with the screening. In South Africa, a research unit first trained PHC nurses and then HIV counsellors to conduct screening for IPV (63, 64). The nurses, who were from four districts in the Eastern and Western Cape, reported that they were more motivated to assist patients and that the training was informative and empowering (63). Yet in both studies providers indicated that there were system challenges to deliver the services, which included staff shortages, and the counsellors who were based at a clinic in Johannesburg were not screening a year later. In this study the gender attitudes of counsellors was also considered to be important (64).

4.1.2. HORIZONTAL DELIVERY OF SERVICES

Almost all of the models that were viewed as horizontal integration included referral outside of the health sector and therefore these are presented together in this section.

Interventions to improve the delivery of post-rape care in South Africa were implemented in two rural hospitals without further expansion. In the first intervention, a nurse-driven model of post-rape care was implemented by a research unit in 2005, consisting of the establishment of a sexual violence advisory committee, development of a hospital rape management policy, running of a training workshop, assigning a designated room for examination, and running community awareness campaigns (54, 266). Prior to the intervention, a review of the service found that it was of poor quality and fragmented, while there were considerable improvements in the delivery of clinical care as well as trauma counselling, and referrals after implementation of the

intervention. In addition, efficiency improved by providing all rape-related treatments in one room and 54% of survivors reported seeing six or more providers compared to 86% in the past. Nurses were able to provide high-quality care, however many nurses were reluctant to conduct forensic examinations as there was a lack of clarity on their ability to testify in court. Moreover, rape survivors provided more positive feedback on the services, staff attitudes, and counselling after implementation of the intervention. A second phase of the intervention occurred in 2006 when the hospital employed a forensic nurse, who was supported by a nurse employed by the project (55). In addition, a lay counsellor and para-legal officer were appointed. In the second hospital, a NGO-led intervention established separate rooms for clinicians, police and counsellors to deliver care for rape survivors, and they provided staff including victim advocates who offered on-going support to survivors (266). The programme was found to improve adherence levels for PEP through intensive counselling plus a household-level follow-up. Between 2007 and 2009, 55% of 765 clients were given PEP compared to rates of 20% to 35% reported elsewhere in the country at the time. However, follow-ups at the household-level are resource intensive for many LMIC, and more costly to implement.

In El Salvador, Guatemala, Honduras, and Nicaragua, national guidelines on sexual violence made provision for comprehensive care but a review in late 2008 on the availability and implementation of the guidelines found that only 18% of facilities had them available and that comprehensive services were not fully implemented (267). Sixty eight percent of facilities had pregnancy tests, 59% had emergency contraception, 38% provided PEP and 3% had hepatitis B vaccine available. In addition, 62% provided psychosocial support either by referral or on-site while only 26% of facilities provided legal assistance again through referral or on-site (267). There was no reliable information on the number of survivors managed and a review of four patient files per facility found poor quality of documentation, lack of standardized forms, and inadequate information. The comprehensive care programme that was implemented in six municipalities in Guatemala was further described in another publication (268). The project included 1) medical and psychological care, and active case finding, 2) prevention of sexual violence through education and awareness, and 3) advocacy and networking. A unique feature of this programme was that a social worker actively searched for survivors who did not attend

their second visit. Challenges included the low number of survivors accessing care, high loss to follow-up thereafter, and the need for legal guidance to be included in the services.

In Mexico and Kenya, models for post-rape care were first tested in a few locations before being expanded more widely in the country (2, 269). In Mexico, the integrated model that began launched in 2000 included the detection of violence, provision of medical care and counselling, information registration, and referral for social and legal services (2). As part of the implementation of the model, health care providers and justice staff were trained and later a national certification course and policy were developed in 2009. In Kenya, a standard of care, protocols and algorithm were initially launched in 2003, while a national guideline was later published, user fees waived in 2005, and an evidence collection kit developed (269). The model included having a coordinator in each District Health Management Team liaising with police to improve referrals although it was later noted that there were still problems with referrals from smaller health facilities and within the hospitals themselves. Other challenges included the lack of coordination between programmes, the fact that clinicians were uncomfortable about testifying in court, the shortage of counsellors, increasing workloads for others, while counsellors themselves had concerns related to confidentiality.

In relation to IPV, two models were tested by external organisations in other countries while two models were tested as part of a research project in South Africa. In the first model, a primary care programme for women suffering from domestic violence was implemented in the University Health Centre of São Paulo in 2000 (Brazil) (270). Patients who were identified at the hospital were referred to the programme in the PHC centre, but all women were able to access the services. Trained health care providers, such as nurses, psychologists, social workers or physicians provided counselling in sessions lasting about an hour, and on average three to four meetings occurred. The programme also used a service guide, which listed all referral services in the city although intersectoral service networks were unable to be established (71). In the second model, presented in an article published in 2002, the Women Friendly Hospital Initiative was launched in 30 facilities in Bangladesh (271). It focused on the management of violence against women, quality of care, mother-baby service package, and gender equity. In terms of the management of violence against women, the initiative required that each level of facility should

have four personnel trained on the Protocol for Violence against Women, adequate examination and records maintained, and a proper referral system to other agencies or higher levels. The Violence against Women Management Protocol and Standard Operating Procedures were developed with stakeholders, researchers and activists, and these were refined over time. Training modules and six-day lesson plans to train doctors and nurses separately were also developed. Doctors were trained more on medico-legal examination, while nurses were trained on psychosocial counselling because of the lack of psychologists and psychiatrists on site. The authors reported that pre- and post-testing were conducted but no results were presented.

Another model for IPV service delivery was tested, revised and piloted in the Western Cape of South Africa by researchers from a local university (15, 272–274). The first study sought to evaluate a proposed protocol on screening for and managing IPV in two urban and three rural PHC facilities as there were no clinical management guidelines for IPV in South Africa (15). According to the protocol, primary providers were expected to provide all aspects of the service including universal screening, forensic documentation, safety assessment and safety planning, referral to the justice system and local services, and follow-up care. Providers from the facilities were trained to screen for IPV and refer to the study nurse but it was found that they did not do this for a number of reasons: heavy workloads, attitudes of providers – feeling that IPV was a social and not a health problem, the nature of the provider-patient relationship, difficulties of managing IPV in a PHC setting, frustration with survivors not following their advice, concerns regarding privacy and danger if they lived in the same community as the survivor, and possibly provider's own personal experience with IPV (272). Furthermore, the full assessment by the study nurse took on average between 60 to 90 minutes, which would make it impossible for the primary provider to implement.

Following this work, a revised intersectoral model for IPV care was piloted in a rural sub-district in 2012 (58). In this model, IPV survivors would be identified through targeted case finding and treated clinically by the primary provider before being referred to a dedicated IPV service that was run by one of the social workers employed by the Department of Social Development on one day a month per facility. Here safety assessment and planning, counselling and referral were to be offered. This would be followed by participation in five life-skills group sessions and a

community-based support group that would be facilitated and coordinated by the Department of Social Development. On completion of the 11-month intervention period, it was noted that 165 women were given appointments for the IPV service yet only 75 (45%) attended. In the same time period 373 IPV complaints had been reported to the police. Only one life skills session was run at two venues, and no community-support groups were established. Access to the intervention was noted as problematic. The fact that the service was only available once a month with potential indirect costs and loss of income for survivors, fears regarding the removal of children or breach of confidentiality within the small communities, concerns regarding stigma for seeing a social worker or suspicions that they would be forced to follow a legal route (as was the previous focus of services) all resulted in poor attendance. The on-going belief that IPV is a non-health related problem continued, resulting in poor-uptake of the project by providers and it was felt that the social workers lacked organizational and facilitation skills to run the group sessions. It was hoped that referrals would be reduced and survivors treated more holistically by the social worker, but this did not occur. In part this was due to the attitude of providers and their lack of capacity in mental health skills, but health system issues such as high workloads also played a part. Another major challenge resulted from the intersectoral nature of the project. The implementation team, which was made up of members from the Department of Health, SAPS, Social Development, service providers and the university, did not function well. They complained about the lack of consultation and opposed the group components of the intervention stating that it was inappropriate in the local context. They did not communicate sufficiently amongst each other and with service providers on the ground resulting in further resistance to the project at all levels. In summary, the scale and the complexity of the project were underestimated and IPV services were not integrated into routine services. The need to consider contextual factors was an important lesson from the project.

4.1.3. ONE-STOP CRISIS CENTRES

4.1.3.1. Efforts by government departments

Government led efforts that are presented in the literature include one-stop crisis centre (OCCs) or similar models.

The Malaysian OCC model for violence response is considered to be the pioneer by virtue of opening the first OCC in a hospital's Accident and Emergency Department in Kuala Lumpur in 1994, and attempts have been made to replicate this elsewhere in the country and region (275). In this model, comprehensive services provided to adults and children include medical care, counselling, specialized services through internal referrals, and external referrals for social welfare and NGOs through the interagency network of police and social workers (275, 276). However, from commencement there were misunderstandings related to roles and responsibilities of the different players. The initiative led to the development of a national policy on the health sector's response to violence against women, and an instruction from the Ministry of Health was given that all government hospitals should establish OCCs. The instructions did not, however, clearly state who should direct the OCCs, and how these should be implemented at district hospitals and areas where there were no NGOs working. This resulted in difficulties in scaling up the services, especially as no additional funds were provided, resulting in many OCCs being poorly supported. As expected, a study that was conducted in 2007 on the OCCs in two contrasting states (276) found that the model differed between hospital settings, as individual, organisational and policy level constraints influenced implementation. Staffing was a problem, with many staff fulfilling more than one role (e.g. one OCC staff member was also the Head of the Emergency Department), meaning that they were not providing a dedicated service to the OCC. Secondary level and especially district hospitals in both states struggled with a lack of specialised providers and limited referral choices. Thus, the consultation process had the potential of being quite lengthy and fragmented, as opposed to being the one-stop service it was meant to be.

A similar approach was used in Thailand and Bangladesh where one or two OCCs were first established before being expanded in the country, yet both experienced some challenges from the onset with staffing and external referrals (277–279). In Thailand, only specific women were screened and all services, including legal assistance, safety assessments, provision of temporary shelter and the hotline were provided by hospital staff as this was considered to be a more effective and sustainable service model when established in 1999. NGOs and other agencies were only called if deemed necessary (277). Although the plan was to expand the OCCs to 20 public hospitals as some budget and technical support was made available by the Ministry of

Public Health (280), a review a year later found that only five were well established. Poor networks within the hospital and with external services were considered to be the reason why some OCCs failed to establish. Other problems with the model included insufficient mental health care, shortage of staff, and difficulties in caring for women who came to the hospital after hours (281). A concern was also raised that the national mandatory policy was published without a proper implementation plan or adequate budget (280).

In Bangladesh, the OCC provided services to survivors of rape and other violent crimes, such as burn victims, and survivors of physical assault including domestic violence (278). Services included health care, police assistance, social services, legal assistance, psychological counselling, a hotline and shelter services. The OCC consisted of four areas: a bedded ward for admission, a second room for doctors, police officers, and a computer programmer, a third room for forensic examinations, and a fourth room for counselling. Staff was comprised of nurses, police staff, a computer programmer, dedicated doctors working from 8am to 2pm, and emergency officers, who admitted and treated patients outside of the these hours. In addition, volunteer counsellors from the NGOs provided legal advice and counselling on court, divorce proceedings, temporary shelter, and child welfare during weekdays. The Department of Social Welfare provided clothing and financial assistance, while the Ministry of Health and Family Welfare trained staff.

In the Philippines, the Women and Children's Crises Care and Protection Units were established in 44 of the 72 regional and speciality hospitals. In the Maldives, an island with a small population, only one Family Protection Unit was established in the Casualty (Outpatient) Department of a hospital (265). Both models used obstetricians / gynaecologists to provide care and included counsellors in the Units. In the model implemented in the Philippines, psychiatrists, psychologists, paediatricians, nurses and social workers sometimes assisted in the service provision. Both countries used external referrals for additional support – in the Philippines referrals where made to the public or private sector including NGOs for legal assistance, police support, shelter, financial, livelihood support, or mental health care and in Maldives patients were referred to social workers at the Ministry of Gender and Family, the

Society for Health Education or a local NGO. In the Philippines, each Unit was required to follow-up their patients until they were discharged or properly referred.

Malawi and South Africa were the only countries that included an improved conviction rate as an objective for the establishment of OCCs. In Malawi, OCCs were initially established after 1999 to address violence against children but it was subsequently expanded to include services to women and men (282). The plan comprised the establishment of 287 OCCs in all major district hospitals but at the time of the publication in 2012, only a few OCCs in referral hospitals were implemented. The OCCs included health, social and police services. External referrals were made to NGOs and faith-based organization for psychosocial services. Some challenges were noted during the evaluation of the service. The Ministry of Health had to address staffing shortfalls within their own department, while negotiating for staff from other Ministries to be released to support the OCCs. At the level of OCC, it was noted that internal networking and referrals, as well as linkages with external resources needed to be strengthened.

In South Africa, a new model, the TCC was piloted in the Western Cape by the NPA to improve the prosecution and conviction of sexual offences cases. The model used a multi-disciplinary team, comprising of police, medical personnel, social workers, prosecutors, and community volunteers (283). The specially trained doctors and nurses were meant to conduct the examinations, collect evidence, complete legal documentation and refer for counselling. Trained and dedicated investigating officers would be responsible to take the survivor's statement and phone the prosecutor to get more advice on the case investigation. Survivors would be informed about the name of the investigating officer and the case number, and transported to a place of safety. The officers and specially trained prosecutors would then continue working with survivors.

As intended, the model improved conviction rates with a report-to-conviction rate of 18% in 2003 while the national average was 7% to 8% (37), and higher trial-to-conviction rates compared to other sexual offences courts (62% vs. 42% in 2004 and 83% vs. 65% in 2006/7) (284, 285). However, an evaluation conducted in 2003 found that the Centre was functioning very differently from the envisioned model (37). In reality, there was no dedicated medical staff,

which resulted in long waiting times for patients. In addition, the nursing sister also provided community liaison and termination of pregnancy services over and above the OCC services. Investigating officers were not on site, occasionally took long to come or came without evidence collection kits. Later studies found that waiting times were reduced (283) but that there was still poor quality of care. A study conducted in 2007 reported that there was insufficient staffing as well as lack of resources, and training (286). Health care providers were not aware of the National Management Guidelines and had poor clinical practices; follow-up care was poor, and the needs of children were not sufficiently being met (286). The reason for testing a separate IPV care model in the Western Cape (described earlier) as opposed to an integrated model with the TCC is not discussed but it may reflect the limited accessibility of the TCCs to larger facilities in more urban settings (58, 274).

Despite the above findings, and without the availability of further evaluation reports, TCCs have subsequently been rolled out across South Africa with 38 to 44 facilities having these specialised centres for rape survivors (287, 288). However, there is evidence that the NPA has looked at rape statistics, accessibility of facilities, available infrastructure, human resources and the extent of intersectoral collaboration during planning the expansion of the TCCs (289). Some provincial Departments of Health in the country have also "borrowed" this model by establishing care or crisis centres in facilities where patients with medico-legal requirements are solely seen. This includes both, rape and IPV survivors. Although the linkages with the police and the judicial system are not as clearly defined as in the TCC model, they are possibly somewhat stronger compared to other facilities due to the nature of the work and arrangement of service delivery.

4.1.3.2. Joint efforts or efforts made by external organisations

Reports from Vietnam and India describe OCCs that were established by the cooperative efforts of external organisations with government. In Vietnam, The Women's Center for Counseling and Health Care was established in one hospital in 2003 by NGOs, research units and government with a focus of improving counselling skills and expanding the use of GBV screening and conduct of examinations by hospital staff (290). A review six years later found that 70% of the 247 staff who were interviewed had not received training on GBV but displayed

a high level of awareness of GBV issues. Efforts to provide care were however hindered by obstacles, such as a lack of training, resources and facilities, and heavy workloads. It was also noted that there was a decline in the willingness to conduct medical examinations, which was considered to be due to the unavailability of protocols required by junior staff to examine and treat GBV survivors.

In India, OCCs were established in two hospitals as part of the Dilaasa[9] project, which was a joint initiative of the public sector (Municipal Corporation of Mumbai) and an NGO (291, 292). The roles of the Municipal Corporation and the NGO were clearly defined at the onset – the Municipal Corporation was responsible for providing the facility, staff in the form of a full-time social worker, a part-time doctor and clinical psychologist, 10 beds, free medical and government referral support, and a Project Director. The NGO was responsible for providing a Project Coordinator and consultants, technical assistance, training a core group of staff, and securing funds from international donors. The crisis centres were eventually managed solely by the Municipal Corporation with the NGO providing technical support only. At the OCCs, medical care and counselling was provided with referrals made for legal counselling or shelters. Women were screened in the wards by OCC staff or referred directly to other departments in the hospital as well as other hospitals, and with time, some women began to access the services on their own. Based on the number of women who had been counselled (peak of 319), the authors raised the concern that the OCC might not be sufficiently accessible. The final component of the project related to expanding the OCC to other hospitals through capacity building and training, but a clear plan for doing this was not provided.

In Timor Leste and Papua New Guinea, OCCs were first established by NGOs but in Papua New Guinea a national guideline was later published stating that each hospital should establish OCCs, and provided details of the staffing, service provision and structure of the OCCs (265). In Timor Leste, the centre that was established in one hospital provided medical treatment, counselling, legal advice, overnight accommodation, follow-up care and referral to other sources, although forensic examinations remained a challenge as there were only two trained forensic examiners in the facility. The NGO provided awareness-raising training but there was no national training

[9] Dilaasa means reassurance

programme. In Papua New Guinea, the staffing requirements according to the national guideline included a full-time nurse coordinator, female community health worker, volunteer and receptionist, as well as a physician and medical social worker on call-duty (265). A national protocol and training was also introduced to standardise the care provided. There were no formal referral systems in place, although informal linkages with local agencies were present. Challenges included a decline in service provision and a concern regarding the implementation of the national guidelines in view of the collapsing health system.

Similarly, in Brazil and Kenya a few specialised centres were established by research units or universities. In the first study in Brazil, a multidisciplinary team (i.e. a nurse, doctor, psychologist and social worker) had been established in 1986 to support survivors in the Integral Care Center for Women's Health, which was based in a tertiary hospital. Specific training was given to providers, and protocols and flow charts were developed (293). The Municipal Health Secretariat subsequently used the model to standardize care in the metropolitan region of Campinas. In the second study from Brazil, a Women's House Centre was established in 1998 at the Federal University in São Paulo (294). Their team, which comprised of doctors, obstetricians and gynaecologists, nurses, psychologists, a psychiatrist, social worker, sociologist and lawyer, were all university staff with an NGO providing the legal support. The Center was established in response to a request by government that university courses in health include work on violence against women and the space thus allowed for learning, teaching and research.

Two projects have also been undertaken in larger hospitals in Kenya. In the first study, the Gender-Based Violence and Recovery Centre was established in Mombasa as a public/private service model offering clinical, social and legal care, where health care providers were provided with specialised training (295). In the second study, the Center for Assault Recovery was established for post-rape survivors in 2007 in a teaching and referral hospital in Eldoret (296). The service was located in a private room next to the Accident and Emergency Department with a part-time hospital nurse managing the Center. A protocol and treatment guideline was developed with local and international collaborators, and a standardized encounter form was developed by physicians, the police and medico-legal experts. The service was provided for free but no samples were collected for DNA analysis. Staff in the Accident and Emergency

Department and Reproductive Health services received in-service training and the nurse managing the Center received training similar to that of sexual assault nurse examiner (SANE) programmes. She was however unable to conduct examinations but provided support to physicians and assisted patients with counselling and treatment. In a review of patient records it was found that the encounter forms were well completed except for the drug and alcohol history, which reflected reluctance by providers and survivors to discuss this. Treatment protocols were also adhered to except that only 44% of patients received counselling, as there was only one counsellor for the Accident and Emergency Department who only worked during office hours.

In summary, various models of care are present in LMIC including South Africa. The models for service delivery were often depended on the availability of local resources, and implementation thus varied across settings. Some models were found to be more viable and resulted in a modest cost if existing staff and infrastructure were used. However, these were somewhat narrow studies with focused interventions and expansion might be more complicated (54, 266). In addition, countries faced the challenge of not having sufficient skilled human resources with specialised skills in mental health and advocacy. Where resources were limited, there was a greater dependence on external organisations. Externally led models were thus more common where the public health system was weak, under-resourced, prejudiced, inaccessible, or where external organisations had a strong presence. As reported, a number of initiatives had thus been made by NGOs and research organisations, sometimes within services or clinics that they ran independently while others had worked within the formal health system of countries. However, this did not always lead to system-wide integration, improvement or change. Where there was a lack of support within the health system, the model disintegrated relatively easily when funding stopped. Then again, in some countries, external initiatives resulted in awareness with health system changes including the development of policies, guidelines, training and adjustment in the delivery of care. Where government services were well established, the response tended to be led by the Ministries of Health and therefore was more easily scaled-up. Yet, even when a service was run by the health sector, sustainability was not guaranteed if there was no long-term commitment and an understanding of the variations in services and resources across the country. Furthermore, in a number of studies problems were reported after the initial project was implemented, yet expansion continued (e.g. OCCs in Malaysia and TCCs in South

Africa) without clearly addressing the initial challenges. A combined approach, where government and NGOs work together could yield the best results, but roles and responsibilities need to be defined upfront and clear communication is essential. It was apparent that OCCs were constituted very differently across countries. Staffing varied from having nurses, counsellors, doctors, psychiatrists or psychologists either on-site or on call-duty. The involvement and linkages with the police and legal services also varied in models, with some having a full-time presence while others were referred to or called, if required. Similarly, some Centres only managed rape survivors and/or survivors of GBV, whereas others provided for additional reproductive and health care needs of women. However, it should always be remembered that OCCs ultimately run as vertical services, which are known to have their own advantages and disadvantages.

5. TRAINING IN POST-RAPE CARE

5.1. TRAINING FOR POST-RAPE CARE INTERNATIONALLY

A number of international training programmes are described, starting with SANE programmes as these are much more established at a national level in several countries of all income categories, followed by programmes that included doctors and other health care providers as trainees.

5.1.1. Sexual assault nurse examiner (SANE) programmes and other nursing programmes

Initially, the nursing model for providing post-rape care has been well developed in the USA and was then expanded into Canada. In the USA, the first SANE programme was launched in 1976 but only took off in the early nineties (297, 298) when the Violence Against Women Act was signed into law in 1994, which made funding available for SANE training programmes (299). Standardized curriculums were developed in the late 1990s and national certification became available in 2002 (169, 300, 301). SANEs were trained to function independently through a 40-hour didactic training linked to a practical component with a preceptor. By the early 2000s, SANE programmes with separate curriculums were initiated for paediatric survivors (300), and

one paediatric SANE course described in the literature comprised a six-day course with a preceptorship that lasted between several weeks to three months (256). In 2006, the SANE qualification was recognized as one of the forensic nurse specialties in the USA (298).

In Canada, nurses could serve as sexual assault nurses who assist physicians or as a specially trained SANE. The SANE programme was introduced in the late 1980s and the length and breakdown of the training is comparable to the model in the USA (297, 298, 302). By 2006, the International Association of Forensic Nurses began offering SANE certification for adult/adolescent and paediatric survivors (300). SANEs programmes were subsequently expanded to a other countries, such as the UK in 2001 (303), Taiwan in 2005 (304), Puerto Rico in 2013 (305), with Brazil considering the programme in 2014 (306). At the end of 2014, 741 SANE programmes were listed across the world, with 92% of programmes (n=680) listed in the USA and 6% (n=45) in Canada (307).

Descriptive studies have found that SANEs improve the psychological healing of survivors, and there has been evidence that they provide more comprehensive medical care, complete documents and collect forensic evidence more accurately and have more cases progress through the legal system and of perpetrators being prosecuted (308–312). SANEs also consider testifying as part of their key performance areas and are therefore more willing to appear in court (312, 313). Survivors who have consulted with SANEs were satisfied with the services received and they had shorter waiting times compared to when seen by a doctors (313–315). Similarly, two studies comparing paediatric cases seen by SANEs and non-SANEs in the USA found an improvement in care regarding pregnancy-related services, testing for STIs, performing genital examinations, identification and recording of genito-anal injuries when seen by SANEs (74, 316, 317). When comparing cases consulted by a paediatric SANE programme compared to the services offered prior to the SANE programme, it was noted that the SANE programme consulted much younger survivors and that their cases had significantly more convictions (318).

Although SANE programmes have been hailed as a significant improvement compared to previous services, it should be noted that they often do not function as separate entities. In an early study in 1997, it was noted that the vast majority of SANE programmes were based in

hospital emergency rooms and SANEs often provided services in more than one location, including jail, the morgue, and other hospitals (319). Although this was convenient for patients and hospitals, it caused problems with the availability of equipment and facilities for an appropriate consultation and examination. In a study conducted in 2003, it was noted that 90% of examinations were still conducted in hospital emergency rooms with 58% reporting that they had separate examination rooms (320). The results remained the same after a repeat survey was conducted in 2005. (321).

Additionally, the cost-benefit of these programmes needs to be considered, especially when very few rape cases were reported annually. In one study, only three cases were reported per year (321). Thus, in many facilities, SANEs perform additional functions, such as those of an emergency room nurses, administrators, and working in other areas of hospitals (309, 320, 321). Yet, one programme reported a challenge of requiring 28 trained SANEs to provide a 24-hour on-call schedule with a high turnover of staff (313). High levels of attrition have been reported in other studies as well (169). SANEs have also been noted to spend up to eight hours with a patient, resulting in workload challenges if they were on duty elsewhere, while this was also found to intimidate other staff who would have to provide the service if a SANE was not available (169, 313). Funding provided challenges in establishing and sustaining the SANE programmes, including having sufficient budget for training, equipment and salaries (322). An early study reported on various salary structure programmes, which were implemented to minimise costs. These included the employment of only 10% as full time staff, paying solely for on-call time or a introducing a fee per examination (301). Although many states prohibit survivors from being liable for payments of forensic services, if they do not have injuries, survivors often have to claim for reimbursements from compensation programmes, if treated (169, 313).

Other weaknesses and challenges were identified during implementation of the SANE programmes. The vast majority of SANEs only consult with adolescent (>13 years) and adult survivors, and there were only a few paediatric SANE programmes. In 2005, only half of the programmes surveyed provided services for paediatric survivors (321). A qualitative study conducted with SANEs in Massachusetts in 2011 found that although the majority supported the

idea of cross-training for paediatrics, a portion were opposed to the idea as they had concerns regarding the emotional stress of caring for paediatric survivors (300). Yet, as the authors note, all Emergency Department staff were required to provide care to survivors and where no SANE programmes existed, they did so. They were therefore more likely, and justifiably so, to feel that they were ill equipped to properly manage paediatric survivors. Relatedly, a study that was conducted in 2001 in Canada noted that there was no standardized training for general nurses, other than SANEs, in dealing with rape survivors resulting in different levels of expertise (302). For example, one centre provided a 2-day training workshop with stated learning objectives, readings and case studies, while another simply asked nurses to read the programme policies and procedures and the instructions from the forensic evidence collection kit. In the USA, it was noted that only 20% of general nursing programmes covered sexual assault in training, with 6% providing 5 or more hours of training on the topic (323). The training was also not adequately covered during in-service. Fifty-four percent of emergency departments, which incorporated SANE programmes provided training for new staff and 28% offered training to existing staff (324).

A further limitation was that more than half of the programmes surveyed in 2005 (56%) reported that they only conducted examinations when a case had been reported to the police (321), although a federal law at the time stated that programmes could loose federal grant money if this was expected from survivors (325). Follow-up also appeared to be poor, and in one of the first reviews conducted in 1997, it was noted that most SANE programmes could not provide data on medical follow-up of survivors – from which it could be assumed that there was minimal or no follow-up occurring (326). In 2005, 44% of SANE programmes indicated that they followed-up survivors by telephone and a third offered follow-up appointments. However, it was reported that only about 20% of survivors returned for their appointments (321). In addition, in an article published in 2007, 58% of SANE programmes reported calling the survivor within two days as a follow-up compared to 44% of emergency rooms without integrated SANE programmes (324).

In some instances it was noted that the initial SANE training was not easily accessible to everyone and the need to obtain continuous education created a further challenge (321). Another concern was the length of the training, with some being unable to leave work to attend the

training and others not being able to complete the training (321). In the UK, a qualitative research project reported on variations within training of SANEs and it was indicated that not all members of the multidisciplinary teams understood their role (303). Similarly, a 2005 study in the USA reported that almost a third of SANEs had conflicts with victim advocacy organisations in regards to their roles and responsibilities (327).

Essentially, it has been noted that SANEs like all other health care providers, are influenced by the environment in which they work and the managers they report to. For example, in a review of a SANE programme, 16 files of survivors (13% of those were consulted in the period under review) could not be traced indicating inadequate record-keeping systems (313). Additionally, during the early phases of the programme, when deciding on staff selection one director reported that she did not hire nurses who had been raped in the last year, as they would not have effectively deal with the experience in that time (301). In addition to her discriminatory view, which had no clear evidence-base, one wondered how she obtained a history of past sexual abuse from the applicants. In a review done in 2006, it was noted that SANEs were not providing all required services and that they were influenced by a range of factors, such as the cost of treatment, working in a Catholic hospital or difficulty in balancing medical care (328). Furthermore, it has been noted that the provision of PEP was inconsistent across SANE programmes and was driven by site-specific protocols and the individual knowledge of SANEs (329). During a study on the provision of PEP, two programme coordinators gave incorrect responses regarding HIV testing post-rape, and many provided responses that included common misconceptions or biases against rape survivors (329).

As with nurses in South Africa, SANEs also face challenges in the court system. Although it was reported that prosecutors consider SANEs to be credible expert witnesses, it is noted that SANEs are questioned by defence attorneys about whether they are sufficiently qualified and competent (330). SANE programmes did also not address two important concerns: follow-up rates remained low (i.e. between 6% and 60% at six weeks) and more than 85% of cases were not referred to prosecutors by police for consideration for a trial (169, 311). Both are affected by broader social and service delivery constraints that are beyond the scope of the SANE service.

5.1.2. Training programmes for doctors and other health care providers

With the focus having moved away from doctors to nurses and the fear of a reduction in skills (331), a number of programmes were developed to train emergency room doctors on the provision of post-rape care and / or forensic medicine (331–334). It is noted, that emergency room doctors manage acutely ill patients well, but they tend to make common clinical forensic medicine errors, such as keeping incomplete records, delaying examinations, missing subtle injuries, recording too detailed history of the assault which can be scrutinised in court especially for children, and destroying pertinent evidence (256, 335). In 1991, the first clinical forensic medicine training programme was developed in the USA (333). During this programme one hour of training was dedicated to adult post-rape care and one hour to paediatric sexual abuse and rape. In addition, emergency room physicians, who were interested, were offered a one-year fellowship in clinical forensic medicine. In Australia, a 6-month rotation in forensic medicine was initiated in 1996 for doctors specializing in emergency medicine (334). The 12 doctors, who were trained up to 2001, all reported that they found the course to be valuable. This feedback was similar to findings from another study that was also conducted in Australia in 2001 and included seven medical doctors, who were employed by the government to provide forensic and medical care (336). These doctors underwent an in-house training on counselling, assessment and prevention of injuries, STIs and pregnancy, and forensic evidence collection. All obtained a graduate certificate in forensic medicine that was run through correspondence by an external university. All doctors reported that the course had improved their knowledge and the way in which they provided care to survivors. A number of articles have also been published on forensic medicine training in different countries, including Turkey (337), India (338), Sri Lanka (339), Egypt (340) and Saudi Arabia (341). Details for training on sexual assault was only briefly described in the articles pertaining to Sri Lanka, Egypt and Saudi Arabia. A detailed breakdown of forensic medicine training at the undergraduate and postgraduate levels at the University of Porto (Portugal) did not provide information on sexual assault training at a postgraduate level although it could possibly fit into other areas of training e.g. personal injury assessment (342). At an undergraduate level, forensic medicine was taught in the integrated Master in Medicine as a fifth year independent curricular unit (342). This included practical classes on selection, collection, preservation and storage of physical and biological evidence, an

approach to victims and their families, sexual assault forensic examination (with mannequins) and participation in clinical forensic medicine examinations.

In 2004, a project was undertaken in the USA to evaluate the effectiveness of a sexual assault training programme that was provided to emergency room residents (332). The training ran over eight hours and included lectures, role-plays and skill laboratories. Although the evaluation showed an improvement in knowledge in the 23 residents who completed all of the assessments, it was unable to show a significant improvement in communication skills. In a second study conducted in 2011 in the USA, 12 emergency room residents working in a military hospital participated in a sexual assault training programme that comprised of 4 hours of lectures and two simulated cases (one male and one female) with actors and pelvic models (331). When comparing the pre-intervention assessment that was conducted a month before with a post-assessment that was done three months later, the authors found a 13% improvement (95% CI 7% - 20%) based on a written examination and a 44% improvement (95% CI 24% - 64%) based on a critical action completion during a simulated consultation. Self-reported comfort and competency improved from pre-assessment to the 3-month post-assessment. In terms of family medicine training, a review of 201 programmes in 2010 found that 67% of programmes provided training on adult sexual assault while 85% provided training on child sexual assault, although details on the actual hours spent on training for these topics were not provided (343).

In Sweden, a National Centre for sexually abused women was opened in the Department of Obstetrics and Gynaecology at Uppsala University Hospital in 1995 (344). Besides providing services for survivors, the Center was also tasked with developing courses for various types of health care providers. A twenty-hour course for nurses, midwives and social workers was subsequently developed on women's legal rights, forensic examinations, the process of normalizing violence, police methods of working, how children cope with domestic violence, and attitudes in medical care. Training for doctors comprised a more intensive two-day course. A Women's Health Center for sexual assault survivors that was established at the Federal University in São Paulo (Brazil) also included a training and research component (294). Monthly classes and case discussions were provided to fourth and sixth year medical students in small groups of 14 pupils at a time. Thirty final year and ten third-year residents of Obstetrics

and Gynaecology and eight nurses and preventive medicine trainees who rotated through the Center per year also provided services to survivors as practical training. Similarly, a specialized referral centre for sexual assaults, that was established in London in the early 2000s required additional staff, including doctors and crises workers, who underwent a six-day course on examination of adult and child survivors and courtroom preparation (345). In addition, crisis workers attended a workshop with the police on managing evidence. New staff observed at least one examination before being placed on-call. Later in 2009, the Society of Apothecaries in London established a Diploma in the Forensic and Clinical Aspects of Sexual Assault for doctors who had an interest and were working in the field (346). This Diploma had been transferred to the Faculty of Forensic and Legal Medicine under the Royal College of Physicians and an online e-learning course was made available to support training (347).

Also in the UK, the British Association of Sexual Health and HIV found that in 2011 less than 50% of genitourinary clinics had training and procedures on sexual violence and only 22% provided local training on writing legal reports and giving evidence (348). They also assessed the level of confidence of genitourinary medicine trainees to manage patients who had suffered from sexual violence. Forty-four of the 158 trainees (28%) participated in the study, of which 28% indicated that they were not competent in documenting history and examination findings and that there was no training available for them, while 7% reported the same for sexual violence history taking and risk assessment in survivors less than 18 years of age (349). The Association subsequently held a one-day training programme in 2013 on male and female adult and adolescent sexual assault, where 93% of the 70 varied participants reported that the training had increased their confidence in managing patients (350). Participants had most confidence in the clinical aspects of managing sexual assault pre-course and post-course. Topic areas, where confidence remained low included, paediatric sexual assault, chain of evidence and female genital mutilation. Although confidence remained low in managing paediatric patients, it was one of the top three areas that showed the greatest increase in confidence. The actual data for this study was not however presented.

With a specific focus on paediatric sexual abuse, physicians, nurses and child protective workers from Indiana County completed a 2-week symposium in 1985 on the topic (351). Data for 21

social workers and 14 medical professionals showed significant improvement in knowledge from pre-test to post-test and this level of knowledge was maintained six months later. In a continuous medical education programme on child abuse, health care providers in New York State completed a self-study programme equivalent to 21 credit hours over a period from 1999 to 2002 (352). Within the 64 providers who completed all assessments (10 paediatric residents, 30 physicians and 24 physician assistants) there were significant improvements in post-test scores. Post-test gains were found not to be significantly associated with practitioner type, educational experiences, affiliations, area of practice, or access to the State Protocol. Two studies were found that focused on improving services for children in the rural areas of the USA. In the first study that was published in 2004, health care providers were invited to participate in a videotape series consisting of five tapes of different lengths (18 minutes for tape 1 to 54 minutes for tape 5) (353). Forty-seven paediatricians, 11 family physicians, 3 emergency medicine physicians, 2 gynaecologists, and 2 surgeons requested the first tape, of which 35 completed tape 1 and only 14 completed all 5 tapes. Significant improvements were noted from pre to post-tests, which comprised of three to four questions per tape. In the second study, three days of training was provided to doctors who participated in a telemedicine intervention that connected the Emergency Departments of two rural hospitals to experts in UC Davis CAARE Center (354). The telemedicine consultation process was found to be highly effective but the training component of the intervention was not evaluated. Finally, the International Society for the Prevention of Child Abuse and Neglect has made a training programme available that can be used in all international settings with some modification by local trainers (355). This comprises of a facilitator's manual, participant's manual and a baseline survey. In this programme, training on child sexual abuse is allocated 10 hours out of the 23-hour programme.

A few studies have considered training for undergraduate students. A survey conducted in 2005 with universities that train medical undergraduate students in the UK found that only 38% (8 out of 21 that responded) provided some training on sexual assault (356). In Florida (USA), a 45-minute lecture was provided to second year students followed by a standardized simulated patient encounter two weeks later (357). Approximately 90 students completed a pre-, post-, and follow-up test after the patient encounter. The researchers found decreased rape myth acceptance and increased endorsement for sexual violence screening from pre- to post-test but

not from post- to follow-up testing. In Ireland, a two-hour interactive lecture was delivered to third year medical students by a multidisciplinary team of clinicians on the appropriate response to sexual violence (358, 359). Eighty-eight students participated in a pre- and post-lecture survey, which indicated significant improvements on common rape myths and knowledge of clinical and forensic aspects of sexual violence (although no data were presented on this). In the USA, 40 freshmen medical students completed a programme on a computer-simulated paediatric sexual abuse case as part of their neuroscience curriculum without being informed on the nature of the case (360). All of the students found the case to be interesting and educational, and 79% felt that it would help them recognize similar cases in the future. Seventy-three percent made the correct diagnosis and this did not differ significantly when compared by gender or previous personal or professional experience with childhood sexual abuse.

In the mental health field, a one-day training programme was provided to mental health practitioners in New Zealand (361). This included a range of professionals, of which 53% were nurses and 5% were psychiatrists. Ninety-four percent of the 85 attendees found the course to be useful and 60% had read the national policy after the training compared to 23%, who read the policy prior to the training. There was a significant increase in confidence to ask about sexual abuse and respond to it, but no increase in those that believed that all patients should be asked about abuse and offered counselling. After six weeks, 67% reported that the training had changed their practice in various ways. A similar study conducted with mental health practitioners in the UK included a one-day training programme on sexual abuse offenders and survivors, as well as screening and responding to sexual violence (362). Thirty of the 53 attendees completed a post-training questionnaire and 93% reported that their knowledge and skills had increased in the domain of sexual assault screening and response, while 77% reported that their clinical practice had changed.

A large study was undertaken in refugee and conflict settings in Ethiopia, Kenya, the Democratic Republic of Congo and Jordan (363). Here health care providers attended a four-day interactive training on sexual assault. The attendees comprised nurses and midwives (71%), doctors (10%), auxiliary technicians and nurse aides (19%). A total of 106 health workers from all countries completed self-administered questionnaires, of which 40 also participated in in-depth interviews.

Records were reviewed in 35 health care facilities in Kenya and the Democratic Republic of Congo three months prior and three months after the training. The post-evaluation revealed that knowledge, confidence and attitudes of health care providers improved, while inappropriate beliefs about sexual assault did not improve. More eligible survivors received emergency contraception (from 50% to 82%), PEP (from 42% to 92%), and STI prophylaxis and treatment (from 45% to 96%), however psychosocial referrals did not show any improvement. Furthermore, efforts to improve post-rape care in Kenya in general included the development of national peer-review training programmes: a three-day course for doctors and an extended course for HIV counsellors, but details of the course were not reported (269).

Lastly, a programme was established in an Emergency Department in the USA where mid-level providers (i.e. nurse-practitioners, and physician assistants) were trained on becoming sexual assault examiners (364). They were provided with a 24-hour course and on-going support. Sexual assault kits analysed at the crime laboratory over a one-year period were compared for this programme with kits from other Emergency Departments. The study found that mid-level trained providers did not collect more evidence than providers in other Emergency Departments, but their evidence collection was more complete and more compliant with standards of forensic evidence collection. On a related point, although articles refer to sexual assault forensic examiners and sexual assault forensic clinicians, these have included both SANEs and other providers such as nurse practitioners, physician assistants and doctors and therefore this terminology does not imply standardized training (169), which could be presented in this review.

5.2. TRAINING IN POST-RAPE CARE IN SOUTH AFRICA

In South Africa, numerous local and provincial training programmes for post-rape care have been developed since 2003. In 2007, a review focusing on face-to-face meetings with all provincial Departments of Health countrywide found that trainings significantly varied in the content and length, which lasted from a few hours to 10 days[10]. Most of the training was developed within or by Departments of Health, but a few provinces used external groups. Hence, training was fragmented and there was a bias towards the legal aspects of services and

[10] Personal communication with representatives of all provincial Departments of Health.

when medical care was covered, training only focused on a specific component of care, such as PEP, but no training covered all aspects of medical care and legal requirements. Training was also provided by other government agencies such as the NPA and the Department of Social Development covering topics on sexual assault, domestic violence and victim empowerment. Table 3 provides an overview of the training content for six of the South African provinces depicting the amount of information covered under each goal, as defined by a national stakeholders' meeting that occurred in May 2008.

In addition, training was often run by specific individuals and therefore depended on their interest and availability. These informal training programmes often lacked educational best practices in that learning objectives were not defined and the training was not based on a needs assessment. Only a few trainings incorporated manuals for trainees, whereas almost none had manuals or guides for trainers. Outcome measures were not specified and there was no formal evaluation of any of these programmes. Academic programmes were directed towards doctors or nurses with a unique programme piloted by the University of KZN that provided a single course for doctors, nurses and paramedics[11]. All academic programmes did not train on post-rape care separately but covered all aspects of forensic medicine. Training on sexual assault and post-rape care for nurses was occurring in only a few provinces (e.g. Gauteng) and in some institutions after the initial efforts to train nurses as described in Chapter 1.

Based on published literature, no studies were found that specifically covered a training programme for post-rape care in the country. An intervention study, which was conducted in one hospital in Mpumalanga in 2003 incorporated five activities in the first phase of the study, of which one was the provision of training for health care and other service providers (54). This included the pharmacist, social workers, police, prosecutors, and district representatives from the Department of Health and Social Welfare. The intervention resulted in positive findings but as indicated, the training formed part of a larger intervention.

[11] Personal communication with Dr. Sagie Naidoo in 2007. Dr. Naidoo is the Clinical Manager (Medical): Clinical Forensic Medical Services of the eThekwini District in KZN.

Table 3. Content of training in six provinces in South Africa based of five specified goals[#]

	Gauteng	KZN [*]	Limpopo	Northern Cape	North West	Free State
Ensuring safety and avoiding revictimisation						
Context of rape & concerns of victim/survivors	+				+	
Prevalence, patterns & causes	+					+
Health consequences	+					+
Sensitivity, non-judgment & confidentiality	+					
Needs of special groups	++		+		+	+
Law	++++++	+++++ +++++	++		+	++
Ethics, patients & sexual rights	++					+
Safety & preventing revictimisation						+
Providing holistic care with proper treatment of injuries, and response to (risk of) unwanted pregnancy, HIV, STIs and psychological distress						
Assess, record history & document		++				+
Non-genital injuries	++++	++			+	+++
Pregnancy			+	+		+
STIs	+		+	+	+	+
HIV	+		+	+		+
Mental health	++	+			+	+
Children	++++		++		++	++
Providing information to survivors						
Info on rape, law & legal processes			+			
Risks, testing, treatment, side effects, follow-up			+			
HIV risk						
Examination & related processes						
Psychological impact & coping						
Referral & further support						
Collecting & documenting evidence and going to court						
Examination	+++++++	++		++	+++	++
Crime kit & chain of evidence	++	++			++	+
Findings: J88 & interpretation	+++	++	+	+	+	+
Courts	+++++	++			++	+
Following up survivors and making referrals						
Follow-up visits						
ART side effects						
3 month HIV test						
Vicarious trauma						+
Monitoring care			+			

[#] The number of + is a qualitative measure indicating the amount of content covered in the training.
[*] Conducted by the Independent Medico Legal Unit

Some work has also been published on training for IPV and domestic violence. In the late 1990s, a study, which focused on attitudes and experiences of GBV in PHC nurses added a four-day training programme on the topic to a 12-month course that nurses were attending in rural Mpumalanga (68). All of the nurses, who participated in the study found the training to be valuable but there was no detailed evaluation of the training itself. Vezimfilho, a GBV programme that was piloted with nurses (63) trained HIV counsellors in a Johannesburg clinic over two days to screen women for IPV (64) but no screening was being conducted a year later. In an IPV service model intervention tested in the Western Cape, doctors and nurses were given a two-hour training on identification of IPV, attitudes and misconceptions surrounding IPV, and on how the intervention fitted into their work (58). The social worker providing the IPV service, as well as 19 other social workers received further training over four days on motivational interviewing, mental health assessment, use of the protocol, and on how to run life-skills and support groups as these were part of the intervention. As with the work in Johannesburg, a qualitative evaluation of the intervention showed poor uptake and adoption of the intervention by providers although survivors were supportive of the service (58).

In summary, with the exception of SANE programmes, international training programmes have been of varied lengths and have focused more on the clinical aspects of training (297, 302, 308, 332–334, 336, 345). Studies comprised of small focused groups and short courses. Very few studies had objective measures for evaluations of trainings, such as simulated cases or medical record reviews of a large sample. The majority of the studies reported some change in terms of knowledge, attitudes and practice, however, no study reported on an evaluation of a national training programme, in either high or LMIC.

6. ATTRITION OF RAPE CASES

A key goal of service provision is to assist the investigation and prosecution of rape cases and thus to provide justice for survivors. Unfortunately this often does not occur. From the time of a rape occurring to the time of obtaining a conviction, there are a few places when cases can drop out of the criminal justice system (Figure 5). The first most notable is the initial underreporting of cases to the police. This is followed by the investigation of the cases once reported, which ultimately leads to a referral to the prosecutor, if the investigation is completed for a decision to

be made about whether to prosecute or not. As not all cases are successful, the final source of attrition after a trial commences occurs when there is an acquittal or a non-guilty verdict for rape. Withdrawals of cases by survivors can occur at any time period. Efforts are made to reduce and minimise the attrition of cases through societal and system level interventions.

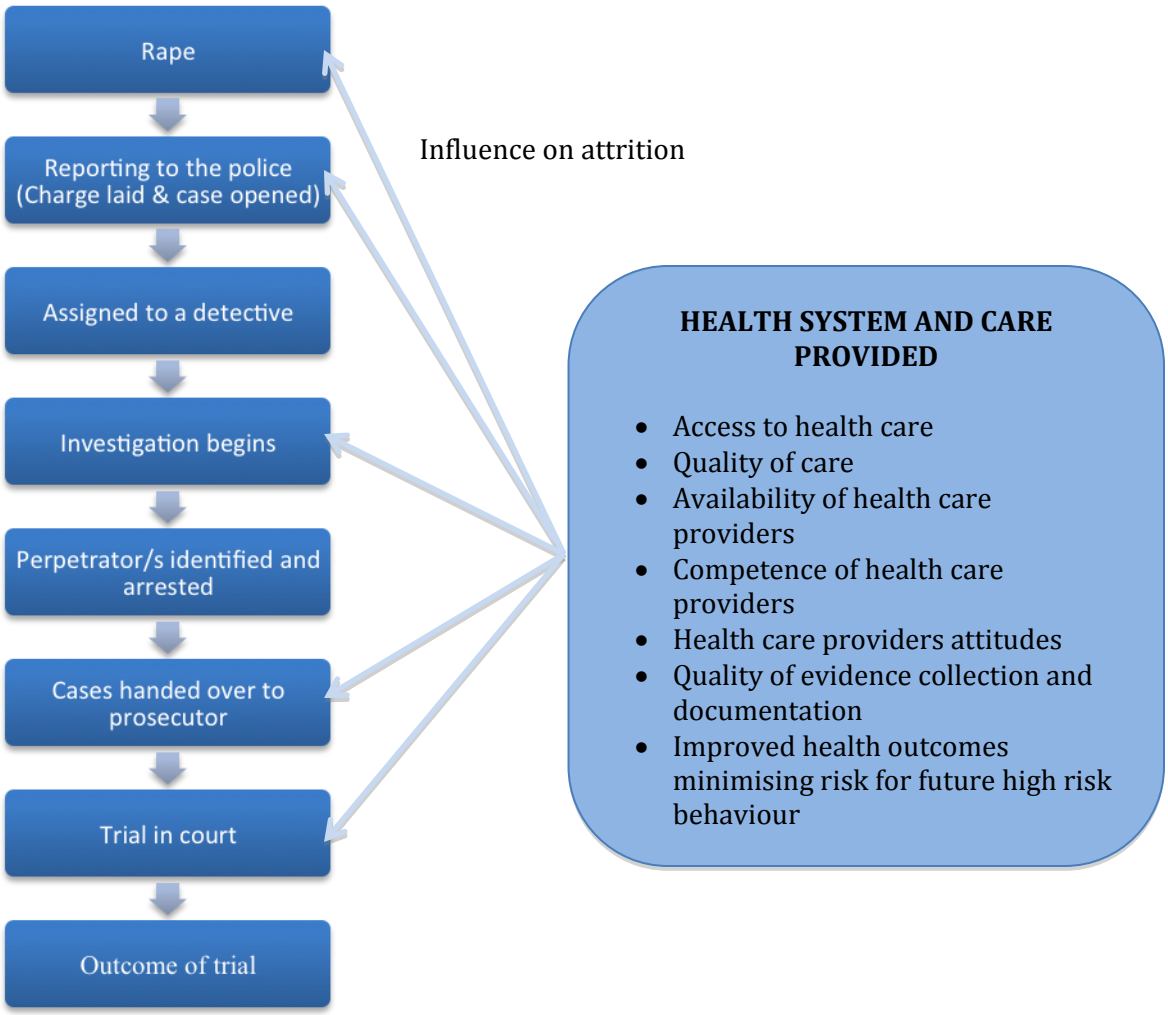


Figure 5. Process of case with potential points for attrition, and areas where the health care system and care provided can influence attrition

There are numerous reasons why survivors do not report cases to the police (79, 109, 225, 365). This includes the fear of not being believed, feelings of shame, guilt and confusion about whether rape occurred or not. A number of women who are subjected to rape do not view it as such, especially when the perpetrator is an intimate partner (366). The lack of reporting may also depend on their ability to inform partners and family, and the potential impact it would have

not only on themselves but also on others close to them. Cultural beliefs on what constitutes rape and how it should be handled also play a major influence. Survivors may also have a bond with the perpetrator and may feel pity or love for him. They may not want to cause difficulties for the perpetrator and/or his family or may even depend on the perpetrator financially. On the other hand, they may fear the perpetrator and there may be retaliation and intimidation by him or those related to him. This is especially problematic when the perpetrator is a person in authority or in a position of power. The poor availability and accessibility of services, and the judgmental attitudes and incompetence of service providers in the police, health and legal fields can also act as a barrier (322). Studies have reported that survivors receive more negative reactions when reporting to formal providers compared to the supportive reactions that they receive from friends and family (367, 368). Survivors may not feel that they are able to cope with the legal process of the case, while others may also fear that their personal history will come under scrutiny during this process or that they will not be believed (76). This is of special concern to women who participate in socially unacceptable behaviour (e.g. sex work, drug usage, etc.) (366, 369). In addition, personal or anecdotal experience on the attrition of cases through the system may impede reporting, resulting in a cyclical process of further loss of reported cases (76). Some survivors find the legal process, and even the medical process, invasive and traumatic, resulting in them repeatedly reliving the experience of the rape and are not able to forget the experience (366).

In contrast, there are factors that increase reporting of rape cases (79, 370). Survivors who feel that they need help, either medically or legally are more likely to report a rape especially if they are aware that the necessary services are available (366). Studies have found that survivors with more injuries are more likely to report their case either for medical care or possibly because they may feel that they have a stronger case to present to the police (163, 366, 369). Survivors may fear their safety and report the rape with the hope that the perpetrator would be arrested, and in addition not cause harm to others (370). They feel that the process of reporting helps them to gain control over their lives.

One of the major reasons that a woman may report a rape is that she hopes that the perpetrator will be arrested and punished for his crime. Although this is not feasible in every case, and in

some situations, survivors themselves withdraw cases or are untraceable; data on the conviction of cases in South Africa paints a dismal picture. As can be seen in Table 4, conviction rates for rape cases in South Africa have remained below 10% of reported cases over time. The findings were no different to those reported in a community study conducted in 1998. Results showed, that for children less than 12 years of age, 55% of reported rape cases resulted in an arrest, 22% went to trial and 10% resulted in a conviction (109, 111). A similar proportion of arrests (57%) were made in cases pertaining to girls aged 12 to 17 years of age, with 21% also going to trial, yet the conviction rate was slightly lower (8%). Amongst adult women, arrests were only made in 47% of cases, a trial commenced in 15% of cases and a conviction was only obtained in 5% of cases. Overall, in 1996, the conviction rate was just over 7% for this population of survivors in South Africa.

Table 4. Conviction rates for rape cases in South Africa (1996 – 2003)

	Location	Sample	Reported cases referred to court	Conviction
1996 (79)	South Africa	All rape cases reported to the police	43%	7% of total cases 19% of referred cases
1998 (365)	South Africa	All rape cases reported to the police	48%	9% of total cases 20% of referred cases
2000 (371)	South Africa	All rape cases reported to the police	46%	8% of total cases (9% in children, 7% in adults) 17% of referred cases
2002/2003 (37)	Cape Town city	Rape cases reported to the TCC at GF Jooste Hospital		18% of total cases
2003 (78)	Gauteng province	2 068 women who reported rape cases to the police	43%	4% of total cases 23% of referred cases

Although conviction rates in some developed countries are higher, the problem with attrition of cases through the justice system remains significant. In a comparative study using data from 13 studies, covering five countries (i.e. USA, Canada, England and Wales of the United Kingdom (UK), Australia and New Zealand), it was noted that estimated conviction rates for rape in all of the countries except the USA decreased from the period 1970 to 2005 (372). The most dramatic decrease has been noted in Canada, England and Wales, where estimated conviction rates of over 30% were reported in the 1970s, which dropped to around 10% in 2000, based on the best-fitting

line per country. In Australia, the estimated conviction rate declined from around 20% in the 1970s to about 15% in 2000, while in the USA estimated conviction rates showed a slight increase from 12% to 15% over the same period. The author estimated that if the rates were combined, for a 100 reported cases to the police, an actual total of 714 sexual assaults took place, and out of the 100 reported cases only 13 convictions would be obtained.

Researchers argue that there is selective filtration of cases in the justice system, which is based on the normative belief of what constitutes rape (170, 171). Studies conducted in other countries have shown that cases that fit into a specific profile are more likely to receive attention in the justice system and obtain a conviction. The expectation is that rape is perpetrated by an armed and violent stranger against a respectable woman who then suffers from injuries during her struggle to protect herself (76, 171, 366, 373, 374). This notion is reiterated at every point as cases that are considered more likely of achieving a successful outcome progress up the system. The factors that play a critical role in this movement include the previous sexual experience of the survivor, her relationship with the perpetrator including whether she had previous consensual intercourse with him, circumstances of the initial contact, use of a weapon and/or physical force, promptness of reporting, proof of resistance and penetration with injuries (168, 375, 376). Not surprisingly, when these factors are present, conviction rates of up to 100% are achieved (377). The presence of injuries, in particular, plays a major role in the conviction of cases (166, 168). Similarly, cases with children and older women are more often prosecuted, whereas those with survivors who had previous convictions are less likely to be prosecuted (378). These beliefs are not only found in the criminal justice system, but also within communities, which play a major influence in the initial reporting of the case to the police (163). Moreover, based on the initial history, the details of the incident are recorded by the police and often already being considered by them to judge the survivor and the merits of her case. Thus, the path that a survivor follows to get help could be described as one that is full of potential hazards, discouragement and lack of access, and survivors are often submitted to other forms of hostility such as prejudice, judgment and intolerance (270, 293).

Although not often considered, the health care system can play an influential role in improving this path and reducing the attrition of cases (Figure 5). Access to health care without

requirements for official reporting, and the attitudes of health care providers can improve attendance rates and potentially reduce long-term health outcomes of the rape (379). The quality of care including evidence collection and documentation, can affect the way in which the survivor, police and the judicial system view the case. Availability and competence of the provider in explaining the findings in court influences the final step in the process. The delivery of health care itself can also have an indirect role. It is hoped that survivors who receive better health care would have improved mental health outcomes, and with it, enhanced coping mechanisms for dealing with the stressful situation and more strength to continue the process, although this might be challenging. Seemingly this may lead to less withdrawal of cases.

7. SUMMARY OF MAIN FINDINGS FROM THE LITERATURE REVIEW

In South Africa, rape is highly prevalent but there are shortcomings in the provision of care to survivors, indicating a need to increase the use of evidence in the delivery of post-rape care. This requires a nuanced understanding of rape and the delivery of care in LMIC. The aim of this thesis is to address some of the gaps in the literature in order to propose potential improvements that can be made to post-rape care services. Table 5 provides a brief summary of the main findings from the literature review and points out specific gaps that will be addressed in the various chapters of the thesis.

Table 5. Summary of existing evidence and gaps in the literature to be addressed in this thesis

TOPIC	BRIEF SUMMARY OF EXISTING RESEARCH	GAPS TO BE ADDRESSED IN THIS THESIS
Context	Bulk of literature from high-income countries (HIC).	Provide evidence from LMIC especially South Africa as prevalence rates are higher and in some countries, including South Africa, rape is also more violent in general. (Chapter 2, 5 – 8)
Organisation of services	Various models of care for rape and IPV have been implemented across the globe with much documentation on the challenges of implementation or expansion.	Review evidence of effectiveness for medical outcomes, use of other services and referrals, as some efforts have been made to look at legal outcomes with different models of post-rape care. (Chapter 4)
Selection and capacitation of health care providers	Lack of data from developing countries on training programmes with most of the data from HIC. The majority of studies had small sample sizes. No evidence of effectiveness of a national training programme for post-rape care.	Evaluate the effectiveness of the pilot of South Africa's national training curriculum in improving post-rape care knowledge and confidence in health care providers. (Chapter 5 & 6)
	Minimal data on factors associated with post-rape care knowledge and confidence of health care providers in general and after training. Research in this field only from HIC.	Test for factors associated with baseline knowledge and confidence in South African health care providers and change in knowledge and confidence after training. (Chapter 5 & 6)
Strengthening the interpretation of medico-legal evidence in terms of genito-anal injuries	Minimal genito-anal injury prevalence data after rape from South Africa or other LMIC. Data from only one other African country (Nigeria).	Provide data on genito-anal injury prevalence post rape from South Africa, by type and location, and for female survivors from wide age group. (Chapter 8)
	No data on factors associated with genito-anal injury prevalence from South Africa or other LMIC. Only data available from HIC and most had small sample sizes and poor analyses of the data (bivariate analysis of multiple factors).	Provide data on factors associated with the absence of genito-anal injuries post rape in the South African setting as there is a high prevalence of multiple perpetrator rape and violence, and the presence of injuries have been shown to influence legal outcomes (Chapter 7). (Chapter 8)

CHAPTER 3

METHODOLOGY: HOW THE STUDIES WERE CONDUCTED

1. INTRODUCTION

This thesis will comprise of one unpublished paper and four peer reviewed journal publications, one of which is a co-authored publication that is included to support the overall body of work. This chapter provides a description of the methodology for the systematic review, the Sexual Assault and Post-rape Care Practitioners Training Initiative Project and the Tracking Justice Project. The systematic review addressed objective 1 of the thesis, the second project was used to address objective 2 of this thesis while data from third was used for objective 3.

Table 6 provides a timeline for the development of the studies from data collection, entry and analyses to the writing of publications for the thesis.

Table 6. Timeline for the three studies

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Study 1						Initial search and identification of publications with data extraction			Extended search and identification of publications with data extraction	Completion of data extraction, commencement of synthesis and publication written
Study 2			Data collection, entry and preparation for analyses		Data analyses and report writing	Data analyses and report writing	Data analyses and report writing			
Study 3	Training of fieldworkers and data collection	Data collection	Post-coding, data entry and preliminary data analyses					Secondary data analyses and report writing	Secondary data analyses and report writing	

2. STUDY 1: A SYSTEMATIC REVIEW OF HEALTH SYSTEMS MODELS OF CARE

2.1. BACKGROUND

In 2009, WHO hosted an expert working group to review experiences and evidence of implementing and evaluating health sector interventions for violence against women. An outline for guidance to the health sector on an appropriate response was drafted but consensus was reached that detailed reviews on various topics was needed before clinical and policy guidelines could be drafted. As part of this work, I was contracted to conduct a systematic review on the effectiveness of service delivery models of care for addressing intimate partner and sexual violence. I expanded this work in 2014 and included it as part of my thesis as it fitted well into the overall theme and provides a good perspective on health system issues.

The systematic review was included as a study in the thesis as it encompasses a more rigorous approach than a general literature review, which is prone to a number of potential biases, of which the greatest is selection bias. The systematic review methodology addresses these by clearly formulating a research question and using explicit methods for searching and identifying articles and analysing data. Literature reviews provide a summary and general understanding of a topic whereas systematic reviews provides detailed knowledge on a specific topic and provides evidence of effectiveness, which was the underlying subject of the thesis. For Study 1, some revisions were made to the typical criteria used in systematic review e.g. restrictions in terms of databases searched or study designs included as it was anticipated that there would be a lack of research in this field, and a greater attempt was being made to include work from LMIC.

2.2. QUESTION

What are the effects of health system level programmes for female survivors of rape or IPV?

2.3. STUDY INCLUSION

The focus of this systematic review was on health system level programmes that were directed to female survivors of rape or IPV. Table 7 lists the criteria that were applied for the inclusion of studies. Articles in English, French, Spanish or Japanese were considered for review.

Table 7. Criteria for study inclusion

Criteria	Requirements
Population	Health organisations and health care providers who provide services to female survivors of rape or IPV
Intervention	Health systems level programmes providing services to female survivors of rape or IPV. This included: • Developing referral networks, i.e. health care providers at one service point referring patients to another service point, including community-based services. • Patients receive multiple services by multiple providers at the same site through internal referrals (horizontal delivery of services) or at one site (vertical delivery of services). • Individual providers are capacitated to offer more than one type of service • Making structural changes, such as changing documentation, reorganising services, changing rules within certain department, etc. In the selected studies the latter two approaches occurred in programmes comprising of approaches that are described in the first two bullets and therefore these were not presented separately. *(Intervention that focused narrowly on screening, advocacy, counselling, or mental health interventions were excluded)*
Comparator	Any comparison data were required. This included randomised controlled trials (RCTs), controlled trials, quasi-experimental studies, parallel groups, cohort studies, case-control studies, and pre-post intervention studies
Outcome	· Physical, psychological or reproductive health outcomes · Rates of rape or IPV recurrence · Rates of providing related services · Referral rates
Timescale	No restriction on time period for follow-up

2.4. SEARCH STRATEGY

The databases that were searched included EMBASE, Medline, Psych Info, CINAHL from 1st January 1990 to 17th November 2014, Criminal Justice, Global Index Medicus, Dissertation/Theses, Lilacs and WPRIM up to 28 June 2011, Psych Books and regional

databases (EMRO IMEMRO, SEARO-IMSEAR and AFRO-AIM) with no year limits. A WHO librarian undertook the search conducted up to June 2011 whereas I conducted the extended search up to November 2014. Terms used to conduct the searches comprised of rape and synonyms (e.g. sexual violence, sexual assault, sexual abuse, etc.), partner violence and synonyms (IPV, domestic violence, spousal abuse, battered women, etc.), any health-related setting (hospital, emergency department, clinic, etc.), health care, public health, and program/programme or intervention or health services.

Initially 26 645 potential articles and documents were retrieved through the search. No systematic review was found that addressed the research question. Duplicate documents and those that were not on the topic were excluded from the initial search results, using specific search phrases and by reviewing each article title. Articles were omitted if they:

- Were purely descriptive
- Did not provide comparison data
- Were on inactivated polio vaccine or vaccination programmes
- Focused on child or elder abuse
- Were based outside of the health care setting (police, court, prisons, shelters, community, etc.)
- Targeted the abuser or men as victims
- Focused narrowly on screening, advocacy, counselling, or mental health interventions

Eventually 869 articles and documents remained, and after a review of the abstracts 703 did not require a full review and were excluded. From the 166 publications that were reviewed, 11 published articles met the criteria of the search strategy.

2.5. QUALITY REVIEW

Although the intention was to apply the Grades of Recommendation, Assessment, Development and Evaluation Working Group (GRADE) criteria (380) this was not applied

due to the poor quality of the majority of the limited publications addressing the research question.

2.6. DATA EXTRACTION AND SYNTHESIS

Two researchers including myself identified relevant publications and extracted the necessary data from the articles. This included information on the study design, setting, sample size, demographics of sample, intervention and comparator, follow-up period, and measures and results of outcomes. Using the extracted information, I synthesized the data to compile the results for the final review. This was done as a narrative based on tables that were drafted for each intervention according to the four outcomes defined in the research question. One study had two publications of varying follow-up periods but both were included as different outcomes that were relevant to the research question, were reported on (381, 382). A meta-analysis of outcomes could not be done due to the diversity of methodologies, settings, and interventions.

2.7. PROJECT MANAGEMENT

I was contracted to conduct the systematic review by WHO. At the time the research question and criteria had been defined but I reviewed this when I extended the search in 2014. I was assisted by a WHO librarian with the initial search but conducted this myself in 2014. Two additional researchers assisted me with the article identification and extraction of data. We met weekly during this period to discuss application of the criteria and selection of publications. If there were any uncertainties about the suitability of a publication, this was discussed at the weekly meeting and after all reviewed the publication a decision was made on whether to include the publication or not. I was responsible for the final synthesis and results.

The project timelines are presented below:

ACTIVITY	PERSON	TIME
Initial search	WHO librarian	June 2011
Initial identification of publications and data extraction	Ruxana Jina Jacqueline Mendes Leena Thomas	July – August 2011
Extended search	Ruxana Jina	November 2014
Identification of publications	Ruxana Jina	December 2014
Data extraction	Ruxana Jina Leena Thomas	December 2014 – January 2015
Data synthesis	Ruxana Jina	January – February 2015
Writing publication	Ruxana Jina	March 2015

2.8. LIMITATIONS

The intervention and health outcomes were not well defined in the original research question and although attempts were made to better define these, especially the model of care, some readers might disagree with these definitions or exclusion criteria. Moreover, these posed challenges with the search strategy and very broad search terms were used to be as inclusive as possible, which resulted in a large initial number of potential publications. Yet, it is possible that some studies may still have been missed. A meta-analysis could not be conducted which limited the reporting of results to a narrative form. Many of the articles were of poor quality and did not report detailed information on sample size, demographics, and measures of outcomes, amongst others. Efforts were made to include publications in other languages but some studies may have missed if the publication title or associated keywords were not available in English. All of the included studies were from HIC, which limit the generalisability of recommendations.

3. STUDY 2: THE SEXUAL ASSAULT AND POST-RAPE CARE PRACTITIONERS TRAINING INITIATIVE

3.1. BACKGROUND

In 2007 - 2008, the MRC developed and piloted a standardized training curriculum on post-rape and sexual assault care for the National Department of Health with funding from the UK Department for International Development. The curriculum was developed after consultation with national stakeholders, reviewing national and international programmes and identifying gaps. A decision was then made on the length of the training and the outline of the curriculum. Experts in specific fields as well as MRC staff were tasked to develop modules for the curriculum. The selection of authors was based on levels of expertise and a need to balance the workloads tasked to each individual author or group of authors. Authors were expected to provide both the content required for a participant's manual and teaching material required for a facilitator's manual.

The submitted work was reviewed and edited by the MRC staff to ensure a balance in teaching approaches, address overlaps in the content submitted, and ensure flow and consistency across the training when moving from one topic to the next. Where gaps were identified, a decision was made to have these completed if the content was considered to be essential. Evidence was sought for content or practice where none was provided, and efforts were made to resolve conflicting opinions or address controversial content. Here the literature was reviewed and advice was sought from national and international experts. Local and international experts then reviewed the content and training materials before the final draft was printed.

The training programme comprised of ten days residential interactive training equivalent to 40 hours of training. This was based on the international standard as noted with SANE programmes and also on the Gauteng provincial Department of Health programme that was running at the time. It was found to therefore allow for a more detailed training programme and was feasible, although somewhat challenging, for Departments of Health to organise, and was agreed upon by

stakeholders at a consultative meeting. The content and teaching approaches are presented in detail in the table below (Table 8).

The training drew on adult education principles such as critical pedagogy as recommended by Freire (383) using small group work, case studies, role-plays and videos. Thus, a variety of teaching methods and styles were utilized. The training provided a comprehensive response to survivors of rape and sexual assault, meeting psychological as well as physical needs, covering both medical management as well as the forensic examination. A balance was obtained between the forensic, legal and medical components. The training was longer than most courses but aimed to build skills that should be of generic benefit across a range of areas of practice rather than just transfer knowledge, and a specific effort was made to focus on communication skills, counselling, information sharing, and mental health skills. The social context and sexual rights (which was a significant gap in previous training programmes) were addressed, as well as the needs of children, men and other groups with special needs.

It was needs driven and developed around clear learning objectives that mapped into the identified needs. Furthermore, it followed a broad road map based on the National Policy and Management Guidelines on post-rape and sexual assault care (26, 27). Emphasis was placed on empowering participants rather than just imparting knowledge. The entire process allowed for reflection on the training content versus current practice, and ultimately what was of benefit for the survivor and resulted in improved legal outcomes.

The training programme was piloted in 2008 to assess the usability of the material, improve content and review outcomes of the programme. I was one of the facilitators of the training with supervisor for this PhD thesis (Ruxana Jina and Rachel Jewkes) and an experienced educator and researcher from the Gender and Health Research Unit of the MRC, Nicola Christofides. External support was obtained from Neil McKerrow, a paediatrician who was providing services in the public sector in KZN and an advocate in private practice with prosecution experience (Adv. Carlos da Silva). Once approved by the National Department of Health, the plan was that on-going training would be run by provincial Departments of Health, using some of the participants of the pilot programme as trainers within their respective provinces. An evaluation plan was

developed for the training and implemented at the time. This study presents findings from the evaluation and further analyses of the data.

3.2. STUDY DESIGN

A cross-sectional study with a pre-post intervention design was used. Health care providers who underwent the pilot training completed questionnaires and were assessed on knowledge both prior to and after the training. The data were collected over a four-month period from April to May of 2008.

Table 8. Content and teaching approaches used

Content	Method of teaching
The social context of rape in South Africa	
Circumstances, context & magnitude of sexual assault in South Africa	Participatory exercise with group discussions, lecture.
The social construction of gender	Video clips with discussions, lecture
Barriers and consequences to reporting rape	Video clip with discussions, lecture
Health consequences of sexual assault and rape	Lecture, video clip
Sexual rights and looking at specific needs of survivors	Sexual history and health survey, group activity on identifying prejudices, reflecting on sexuality and diversity based on survey results, lecture, flip chart activity to identify rights, group activity to discuss health rights of specialised groups, lecture and video clip on LGBT needs.
The legal framework for rape and sexual offences	Lecture, group discussions based on scenarios.
Initial approach to a rape survivor	
Developing communication skills	Recalling good listening experiences, role play by facilitators used to identify good listening skills, applying communication skills through role play using scenarios (with checklist for peer assessment)
Initial approach to the survivor and obtaining consent	Completion of a facility checklist, lecture, applying communication skills through role play using scenarios to obtain consent
History taking	Three selected attendees participated in a role play on history taking
Managing health problems	
Introduction and background to mental health care	Lecture, role play on applying communication skills to talk about common reactions to rape
Cognitive behavioural therapy and in	Lecture, viewing video specially developed on approaches,

Content	Method of teaching
vivo exposure	role play cognitive behavioural therapy and in vivo exposure with scenarios (using checklist for peer assessment)
Imaginal exposure	Lecture, viewing video specially developed on approaches, role play imaginal exposure (using checklist for peer assessment)
Prevention and management of pregnancy	Lecture
Prevention and management of infectious diseases	Lecture with hand-outs
Prevention of HIV	Lecture
Communication with rape survivor on pregnancy and infectious diseases including HIV	Applying communication skills through role play using scenarios (with checklist for peer assessment)
Thinking through adherence	Group activity with discussion
Examining survivors and documenting injuries	
Introduction to examining survivors and overview of genital anatomy	Role play general examination in pairs, labelling of genital diagrams
Examination of the adult survivor	Lecture
Special examination techniques	Lecture
Special considerations during the examination of survivors	Video clip, lecture
Non-genital injuries	Self-assessment with case studies, lecture
Introduction to sexual assault in children	Lectures with assessment exercises
Examination of the child, features of rape and interpretation of findings	Lectures with assessment exercises
Collection of forensic evidence	Video clips, lecture, use of mannequin to develop skill
Introduction to documentation and completion of J88 forms	Lectures, review of completed J88 forms, completion of form based on role play by facilitators and scenario (with model answer for assessment)
After the initial consultation	
Follow-up care	Group activity on follow-up care
Introduction to the criminal justice system	Lecture
Giving expert testimony	Lecture, mock trial with selected attendees
Understanding vicarious trauma and countertransference	Group activities and lecture
Monitoring and evaluation	Flipchart activity, lectures, quiz

3.3. STUDY SITES AND SAMPLE

Provincial and facility managers were asked to send approximately 20 health care providers per province to undergo the training using the following criteria: i) doctors who had completed their internship year, ii) professional nurses with midwifery, and iii) service providers with previous exposure to sexual assault services but the level and length of exposure was not prescribed. Some additional people attended from the provincial and national Departments of Health (e.g. managers of programmes) but were not included in the study. The estimated sample size of 160 was limited by budget but was expected to be sufficient to identify an increase in percentage knowledge in health care providers from 50% to 70% with 80% power and a 90% confidence level based on methods recommended by Fleiss (384) (Table 9).

The selection criteria were developed by national and provincial Department of Health managers with support from MRC staff. Provincial managers were also asked to consider the need to have some staff who would support future training as facilitators. Furthermore, it was agreed that both doctors and nurses should be trained at a stakeholders meeting but provincial managers were asked to take into account the staff establishment and human resource planning when selecting providers to attend the training. This included the fact that there should be a clear job description and allocation for the trained provider to deliver post-rape care services including conducting the examination and collecting evidence after they had attended the training. The decision to have less staff trained from more provinces was made at the stakeholders meeting. In total, 152 health care providers were trained from eight provinces, as the Western Cape did not participate in the study.

Table 9. Sample size calculation for change in knowledge in health care providers who underwent training

Confidence level	Power	Knowledge at baseline	Knowledge after training	Calculated sample size
95%	80%	50%	65%	338
90%	80%	50%	65%	266
95%	80%	50%	70%	188
90%	80%	50%	70%	148
95%	80%	50%	75%	116
90%	80%	50%	75%	92

3.4. DATA COLLECTION

Data were collected prior to and after the implementation of the training intervention (Figure 6). The 152 health care providers who attending the pilot training were invited to complete self-administered questionnaires at two time periods. The first questionnaire was distributed to the providers on arrival for the residential training. These were self-completed and submitted prior to the commencement of the training. The second questionnaire was completed immediately on completion of the training programme. Health care providers also completed an examination comprising of 75 multiple-choice questions that covered material taught on the training course. The order of the questions was changed when the assessment was conducted at the end of the training but the same questions were included. All health care providers were required to complete both examinations but they could choose whether to participate in the research by completing the questionnaires. Each health care provider was asked to generate a replicable code for himself or herself so that pre- and post-intervention questionnaires and examinations could be matched.

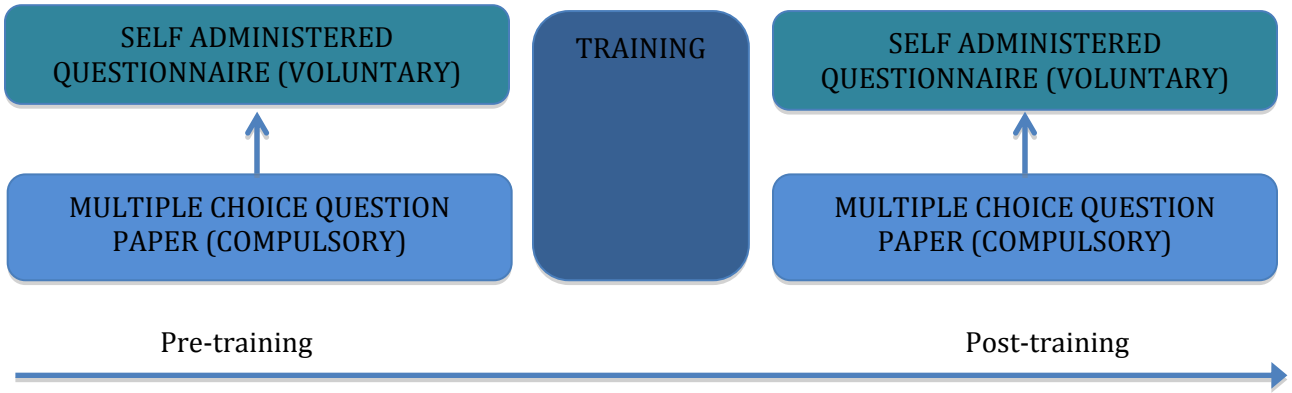


Figure 6. Data collection pre and post training

3.5. DATA COLLECTION TOOLS

3.5.1. Questionnaire

I developed the questionnaire drawing on standardized tools and questions that have been previously tested in research conducted by the Gender & Health Research Unit, including a

questionnaire used in a situation analysis of sexual assault services (49), another on the completion of SAECKs by health care providers (51) and a questionnaire used in a Survey of Men's Health and Relationships (119) (Annexure A).

Information was collected on which training the provider attended, and socio-demographic characteristics of providers, which included age in years and sex. Information was also collected on their rank (doctor or nurse), the level of the facility where they currently worked in (e.g. clinic/community health centre or district, regional or tertiary hospital), whether the facility had a crisis centre and if it ran 24 hours a day for seven days a week, the province they currently worked in, their length of service in total number of years and at their current facility, and their work at the facility. They were then asked specifically about the number of rape survivors that they consulted as a percentage of all survivors that come to their facility, whether they had examined a rape survivor and completed a J88 form in last three months, and the number of adult and paediatric rape cases that they consulted in last three months.

Questions on previous training included the country where they received their basic health education, hours of training they previously received on counselling, whether their first training on counselling was during their undergraduate or in-service years and when did they last receive training on counselling. They were questioned about previous training on rape: the hours of training during undergraduate training and in-service years, when was the last training they received, and what was the content that they had covered during in-service training.

Providers were asked about the main reason for working in rape services and to rate what influence the following factors had on them for working in the field: experience of sexually assault of someone close to them, an opportunity to advance at work, intellectual interest in the area, extra pay for being on call, feeling passionate about rape issues, or only part of their work. Providers were also asked about what they felt was the importance of certain aspects of care. This included being non-judgemental towards patients, planning follow-up care for all patients, explaining to patients about their care, thinking about patient's psychological needs, listening to patient's problems, keeping good records, providing evidence-based care, and making sure that national management guidelines are followed.

Data were collected on rape myths, gender attitudes and empathy levels. Health care providers were asked whether they strongly agreed, agreed, disagreed or strongly disagreed with 21 statements on rape myths using a Likert scale with scores of one to four. This included statements such as "some women lie about rape to punish men", "if a woman doesn't physically fight back, you can't really say it was rape", "only certain types of women are raped", and "a woman who is raped brings shame on her family". Gender attitudes were assessed in a similar fashion using another 21 statements that had to be scored with the same Likert response options. Examples of statements included the following: "a man needs other women, even if things with his wife are fine", "it is a woman's responsibility to avoid getting pregnant", "if a woman cheats on a man, it is okay for him to hit her", and "it is important that a father is present in the lives of his children, even if he is no longer with the mother". For the assessment of empathy levels, health care providers scored four statements using a five-level Likert scale. This ranged from a score of one if the statement did not describe them well to a score of five if it did. Two examples of statements related to empathy were "I am often touched by things that I see happen" and "when I see someone being taken advantage of, I feel protective toward them". The gender and rape-attitude scores were based on work done by Burt in the 1980s (385), and Pulerwitz and Barker with men in Brazil in 2008 (386), while the empathy score was based on work done by Abbey et al. (387).

A version of the WHO's instrument for violence against women was used to enquire about the experience of rape or IPV for female health care provider and perpetration thereof for male providers (388). This included acts of such as slapping, pushing, shoving, hitting, threatening a partner or using a weapon against them, or tricking, threatening or forcing them to have sex or having sex with them when they were too drunk to say no.

3.5.2. Multiple choice question paper for the examination

I developed 75 multiple choice questions for the examination with the assistance of two senior researchers (Annexure B). These were based on the content and teaching material provided. All three of the researchers had extensive experience in both undergraduate and postgraduate

education and in setting multiple-choice questions for examinations in the health field. Attempts were made to match the number of questions per topic proportionately to the amount of teaching provided on the said topic. Each question had four options with a single best answer, which are commonly used in medical assessments and are found to discriminate better between high and low performers (389).

In total there were six questions on the context of sexual assault in South Africa, six on sexual rights, eight on the law and judicial processes, three on communication, four on the general provision of medical care, nine on mental health, six on preventing and managing pregnancy after rape, four on preventing and managing infectious disease excluding HIV and then four on the HIV, nine on examination and evidence collection with an additional eight that had a specific focus on children, three on documentation, one on follow-up care and four on vicarious trauma.

Providers were made to complete the multiple choice question papers in the venue used for the training on the first day prior to commencing the training and on the last day during a closing session. At least two of the researchers remained in the venue at all times to ensure that providers completed the papers unaided and this was done without any breaks.

3.6. DATA ANALYSES

Data from the questionnaires and the multiple-choice examinations that were completed by the health care providers was entered and analysed using Stata 12.0. The datasets were merged and linked using the unique codes that were generated by the health care providers. All data that could be linked were used in the analysis while missing data for variables were excluded. The cleaning and coding of variables that were not included in the publications are not presented here. This included the actual number of survivors consulted as most providers gave estimates or provided a generic response (e.g. 3 patients/week), hours of training, content of in-service training, motivations for working in the service, and relationships at home and with family.

The proportion of rape survivors that are seen by the provider was pre-coded on the questionnaire into five categories and was used as such in the data analyses: 0% – 20%, 21% –

40%, 41% – 60%, 61% – 80%, and 81% - 100%. Total time in the services were categorised into three groups: less than 10 years in services, 10 to 19 years in service and 20 or more years in service. The total time that a provider was working at their current facility was categorise into similar groups although the second group was cut off at 14 years and the third group consisted of providers who worked at their current facility for 15 years or more.

Data of the experience or perpetration of rape or IPV were categorised into three groups. The first group comprised of providers who had neither experienced or perpetrated rape or IPV, the second consisted of female providers who had experienced rape or IPV and the third, male providers who were perpetrators of abuse. The experience or perpetration of rape was combined with that of IPV due to the small numbers of providers in each category, which would affect the inferential data analysis procedures.

The following new variables were generated from the collected data: a "rape attitude score", a "gender-related attitude score", an "empathy score", and measures of knowledge and confidence in providing post-rape care services and appearing in court. The rape attitude score was obtained by adding the responses for the 21 statements on rape myths while the scores for two statements that were phrased in the positive were reversed before being added. The maximum possible score was thus 84 with a higher score reflecting a more appropriate attitude towards rape. A gender attitude score was developed in a similar fashion using 21 relevant statements with the scores of five statements being reversed before totalling. A higher score reflected a more gender sensitive health care provider. Finally, an empathy score was developed using the four statements with a five-level Likert scale. The maximum potential score was 20 and a higher score reflected a more empathetic provider. As scores are only generated for variables that have no missing data when added in Stata, an average score was imputed for a response if only one response was missing. This was done for 17 responses on rape attitudes, 16 responses on gender attitudes, and 5 responses for the empathy score when the data analysis was done for publication three (Chapter 6). No imputations were made if more than one response was missing. The Cronbach's alpha for the rape attitude score was 0.82, 0.76 for the gender attitude score and 0.77 for the empathy score.

The level of knowledge was assessed through the multiple-choice questions where one mark was allocated for each correct answer and there was no negative marking. Nine questions with a failure rate of more than 90% at the pre-training assessment were excluded resulting in a total of 66 questions (Table 10).

Table 10. Questions that were removed from the analysis

Content	Pre-training score
Law and judicial processes (Sexual Offences and Related Matters Amendment Act)	6.3%
Sexual rights	6.3%
Examination and evidence collection in adults (non-genital injuries)	8.9%
Examination and evidence collection in children	5.4%
Examination and evidence collection in children	2.7%
Documentation	8.0%
Documentation	9.8%
Documentation	2.7%
Vicarious trauma	9.8%

Confidence was self-reported by health care providers using a score of one to indicate 'no confidence' and ten 'total confidence' in providing ten aspects of the service. These included confidence in examining an adult survivor, completing an evidence collection kit with an adult, completing a J88 form, examining a paediatric survivor, providing pre-test counselling for HIV, discussing common psychological symptoms and how to cope with these, supporting adherence with PEP, talking with survivors about sexuality, sexual health and condom use after rape, talking with parents about supporting children who have been sexually assaulted, managing HIV prevention in patients who have other medical conditions, and explaining findings in court. As with the rape attitude, gender attitude and empathy score, an average score was imputed if a single response was missing to calculate the confidence score for publication three (Chapter 6). This was done in 10 instances for the confidence score.

Both the knowledge and confidence scores were totalled, converted into percentages and categorized. Providers with a percentage score of 50 or more were considered to have high levels of baseline knowledge. For publication two, providers with a percentage score of 80 or more were considered to have high levels of baseline confidence but this was adjusted to a

percentage score of 70 for publication three. For publication three (Chapter 6), change in knowledge and confidence were calculated by subtracting baseline (pre-intervention) percentage scores from the post-intervention scores. A four-level variable was generated to categorise baseline percentage knowledge and confidence scores that was used in the analysis of publication three. The first group consisted of health care providers with high knowledge (score of ≥50%) and confidence (score of ≥70%) at baseline; followed by group two with low knowledge (score of <50%) and high confidence (score of ≥70%); group three with high knowledge (score of ≥50%) and low confidence (score of <70%); and finally group four with low knowledge (score of <50%) and confidence (score of <70%) at baseline.

In both publications descriptive statistics were first calculated and presented before bivariate analysis was conducted. In publication two (Chapter 5) it was hypothesized that provider socio-demographics (older age, male sex, being a nurse, providers working outside of Gauteng and KZN, providers who have not experienced IPV, providers with no previous training on post-rape care or counselling, longer lengths of service, and providers with less appropriate gender, rape and empathy scores), facility characteristics (working in a clinic, not having a crisis centre in the facility), and provider experience with service provision (not having examined patients or examined less patients, not having completed a J88 form) would be associated a lower knowledge and confidence in providing post-rape services. Two logistic regression models were therefore built to test this hypothesis for knowledge and confidence separately. In building the models, variables that were found to have a p value of <0.20 on bivariate analysis with baseline knowledge and confidence percentage scores were tested for the final model. This included sex, age, rank, experience or perpetration of rape or IPV, rape attitude score, total time working, whether the provider had examined a survivor in the last 3 months and completed a J88 form, and whether the provider was previously trained on counselling for the model on baseline percentage knowledge scores, while only three variables were tested in the model for baseline percentage confidence levels: whether the provider worked in a facility that had a crisis centre, whether the provider had examined a survivor in the last 3 months and completed a J88 form, and proportion of survivors seen of those who come to the facility. Those that continued to have a p value of ≤0.05 were retained in the final logistic models for knowledge and confidence.

For publication three (Chapter 6) it was hypothesized that the two week training programme would significantly increase knowledge and confidence in health care providers, and that provider attitudes before training would predict knowledge and confidence after training. To begin, paired t-tests were conducted to investigate for significant changes in percentage knowledge and confidence in providing post-rape care after the training. The question of whether provider attitudes before training would predict knowledge and confidence after training was examined by building a multiple regression model of factors associated with higher knowledge and confidence. Similar to the technique used above, backward selection was done using variables that were found to have a p value of <0.20 to develop the final linear regression models for change in knowledge and confidence. The following variables were found to be significant with bivariate analysis and were therefore tested in the final model for percentage change in knowledge: provincial location of the health care provider, time working in current facility, proportion of survivors seen of those who come to the facility, country where provider underwent undergraduate training and baseline knowledge and confidence levels. For the model on change in percentage confidence, the following variables were tested in the final model: provincial location of the health care provider, level of facility where provider worked, experience or perpetration of IPV, time working in current facility, whether the provider had examined a survivor in the last 3 months and completed a J88 form, proportion of survivors seen of those who come to the facility, and baseline knowledge and confidence levels. The final models comprised of variables that maintained a p value of ≤ 0.05 while adjusting for baseline knowledge and confidence levels.

3.7. PILOT STUDY

I conducted a pilot study prior to commencement of the training. Approximately ten health care providers completed the questionnaires and the multiple-choice question papers. After the completion of the pilot, the data were entered into a database. Minor modifications to the questionnaire and methodology were made thereafter.

3.8. ETHICAL CONSIDERATIONS

Ethics approval was obtained from the Human Research Ethics Committee (Medical) of the University of the Witwatersrand before the study began (Annexure C). The health care providers were informed of the study using an information sheet (Annexure D) that was provided to them with the questionnaires. The providers who agreed to participate in the study were requested to submit the signed informed consent forms (Annexure E) when they returned the completed questionnaire during registration on their first day of training. The health care providers were provided with another information sheet and the second questionnaire at the end of the training programme, which they completed and submitted during the closing session of the programme. As sensitivity regarding some of the questions was a concern, and to avoid questions being asked in a leading manner, a decision was made to have health care providers complete the questionnaires on their own. All questionnaires were in English but this was not considered to be a concern, as health care providers who met the selection criteria would have sufficient competency in written English to complete the questionnaires. Providers were given a list of support services in their training manual, which they could either use to refer patients to or access services themselves if required. In order to maintain anonymity and encourage unbiased responses, no individual-level intervention was offered if providers reported experience or perpetration of rape or IPV.

Each health care provider was asked to generate a replicable code so that pre- and post-intervention questionnaires and assessment of knowledge could be matched. The code was based on their cell phone number, name and city of birth. In so doing, all data collected was kept strictly confidential and utmost care was taken to ensure that the anonymity of the study participants was maintained. A researcher who was not directly involved in the intervention (training) was responsible for securing all of the data during the collection phase. If she identified discrepant codes at the closing sessions, she presented the mismatched codes asking providers to meet her privately to correct their codes. This was done to reduce the number of data collection tools that would not be matched but in a manner that would ensure anonymity. In the pre-training session, 124 health care providers completed the questionnaires (82% of those trained) and in 116 (76% of those trained) the multiple choice question paper was also matched.

In the post training session, all of the pre and post-training tools could be matched for 112 providers (74%).

3.9. PROJECT MANAGEMENT

I was employed to manage the project and was the primary researcher of the study. I oversaw the development and compilation of the curriculum, and as one of the lead authors, I wrote or edited many of the sections of the curriculum with my supervisor. I managed the pilot testing, and developed the methodology for the evaluation with support from my PhD thesis supervisor. I managed the data collection and entry processes, and was solely responsible for the cleaning and analysis of the data. Prof Rachel Jewkes, my supervisor, mentored me in the research, and together with Dr. Nicola Christofides, assisted in conceptualising the study design, tools and data collection processes. Ms. Lizle Loots acted as a research and project assistant, providing additional administrative support especially in the data collection processes. All were included as co-authors on my publications and they commented on the analyses of the data and written publications.

The study commenced in February 2008 and data collection was completed by May 2008. The project timelines are presented below:

ACTIVITY	PERSON	TIME
Data collection	Ruxana Jina Research assistant	February 2008 – May 2008
Data entry and preparation for analysis	Ruxana Jina Research assistant	June 2008 –December 2008
Data analysis and writing report	Ruxana Jina Rachel Jewkes	November 2010 – November 2012

3.10. LIMITATIONS

This was a cross-sectional study although the pre- and post-intervention design provided comparative data to evaluate the effects of the training programme. Changes to the level of knowledge and confidence in providing post-rape services may have resulted from other

influences outside of the training programme but attempts were made to reduce this by collecting the data just prior to and immediately following the completion of the training programme. Longer-term improvements as well as change in practice were not measured in this study although a three-month follow-up study with providers was planned. Questionnaires were sent to provincial managers for distribution with pre-paid envelopes by the research assistant; however, very few questionnaires were returned despite various follow-ups and this data could therefore not be used in the analyses. Broader health system issues were also not assessed but these could not be changed by this intervention.

The selection of providers for the training may have reduced the generalizability of the findings and there were no providers from the Western Cape Province. The sample size was small with 124 providers completing the pre-training questionnaire and all of the data collection tools being matched for 112 providers (73.7%) in publication three (Chapter 6). This somewhat limited the analyses of the data.

It is possible that some health care providers may not have accurately reported on questions that would be considered to be sensitive, and this may have resulted in desirability bias. Attempts were made to reduce this by using self-administered questionnaires and assuring confidentiality, however some questions were still left blank by providers. There was also a potential for recall bias.

The measures for knowledge and confidence were developed by the research team specifically for the study and were used for the first time. These require further testing for reliability and validity. Nine multiple-choice questions were later excluded in the data analyses as they had very poor responses suggesting that they were probably not well-designed questions. Average scores were imputed if there was one missing value in the rape attitude score, gender-related attitude score, empathy score and confidence score when the analysis for publication three was conducted. The effect of doing this on the regression analysis is unknown but it was unlikely to have altered the results, yet it improved the sample size and robustness of the analysis.

4. STUDY 3: "TRACKING JUSTICE: ATTRITION OF RAPE CASES THROUGH THE CRIMINAL JUSTICE SYSTEM IN GAUTENG PROVINCE"

4.1. BACKGROUND

The Tracking Justice Study was conducted to explore the manner in which rape cases were processed by the criminal justice system up to the final outcome, to describe the characteristics of the reported rapes, to gain insights on the level and causes of attrition through the legal system, and to identify factors that were associated with low conviction rates. It was funded by the Norwegian Centre for Human Rights, the Open Society Foundation, the Ford Foundation and the MRC of South Africa.

A specific focus of this thesis is the value and interpretation of medico-legal evidence, especially related to genito-anal injuries. The Tshwaranang Legal Advocacy Centre to End Violence Against Women, the Gender & Health Research Unit of the MRC, and the Centre for the Study of Violence and Reconciliation conducted the study jointly, after funds had been raised for it by the Centre for the Study of Violence and Reconciliation. The study that was based in Gauteng province of South Africa began in 2006 and a report on the main study findings was published in 2008 (78). It included a sample of randomly selected rape cases that were reported to the police in 2003, for which relevant documents pertaining to criminal justice processes were reviewed.

4.2. STUDY DESIGN

A cross-sectional design was used for the study. Police and court records of a random sample of rape cases reported in Gauteng in 2003 were retrospectively reviewed. All cases selected met the common law definition of rape in force at the time, i.e. "intentional, unlawful sexual intercourse with a woman without her consent" (18). The year 2003 was chosen as permission was only obtained to review cases that were closed by 2006 (when the study was conducted) and this was thought to be a sufficient time period to ensure that the majority of the cases could be included in the study sample.

4.3 STUDY SITES AND SAMPLE

A two stage sampling procedure was used to select the cases. In 2003, a total of 11 926 rapes were reported at 128 police stations in Gauteng province. In the first sampling stage 70 police stations were selected using probability proportion to size, where size was based on the number of rape cases reported to the police in 2003. For the second sampling stage 30 cases (or all cases if there were less than 30 cases reported in the year at the police station) were randomly selected from all cases that were closed at the time of data collection.

We aimed to have a sample of 1 500 cases in the sample. Working on an assumption that 70% of dockets would be unavailable (due to being open, mislaid or lost), we needed a planned sample of 2 100 dockets in all. If police stations provided up to 30 cases per station and we assume a design effect of 2 (due to clustering), the precision for arrests (assuming 50% of cases will have an arrest) in sub-groups will be 6 % with 500 cases per sub-group and 8% if this is 300 per sub-group. We anticipated from this sample that about 300 cases would go to trial, which is a large enough sample to model factors associated with this outcome.

To be included in the study, cases of rape had to have been reported to the police between 00h00 on 1 January 2003 and 23h59 on 31 December 2003 at one of the selected Gauteng police stations. Cases were defined by the number of survivors. Thus if two women were raped by one man, these were counted as two cases whereas it would only be recorded as one case if a woman was raped by more than one man. No cases were replaced if the dockets of the selected cases were not found. During the data collection period it was noted that 70.1% of cases could be included in the sample as they were closed with available dockets of which a final sample size of 2 068 was obtained. The research team was unable to ascertain how many dockets were unavailable because cases were still open or were missing for other reasons.

4.4. DATA COLLECTION

Prior to data collection, 11 field workers and two supervisors were recruited and trained for five days by researchers involved in the study. For this a manual was developed that fieldworkers

could reference during data collection. The training covered the content of the manual in detail which comprised of a briefing of the study (objectives, functions of organisations involved, and funders), duties and responsibilities of the fieldworkers such as identification of the correct dockets, reviewing of dockets, peer review of completed tools, and appropriate conduct during fieldwork. The data collection tools were explained in detail for each variable including how data should be completed, where to obtain the information from and how to interpret the information. Specific instructions were provided on how to copy the J88 form electronically or in writing. A list of key terms that they would possibly encounter was provided. The two supervisors also provided an oversight function, answering queries where possible during data collection, and addressing these with the primary researchers if they were more complicated. They also assisted with post-coding the data.

Data were sourced from different records using two different tools. Firstly, permission to review closed rape dockets was obtained from the national and Gauteng police structures before individual stations were approached for entry. At the police station, a printout of all rape dockets recorded on the station's crime administration system (CAS) was obtained and then cases were randomly sampled from this list. Once the sample was computed, dockets were retrieved from the police station or FCS Units and closed cases were included in the study. Information was then recorded from the dockets onto a data collection tool (Annexure F) by the trained fieldworkers. The docket comprises of three parts consisting of: direct evidence (such as witness statements), the J88 form on which the medical examination and its findings is documented and any other reports, including that from the Forensic Science Laboratory if available; the 'investigation diary', which consists of written communications between the investigating officer, a superior police officer and the prosecutor, and finally other administrative correspondence which was not recorded for the study.

J88 forms were copied verbatim or photocopied from the dockets or court records. The information from the J88 forms was later coded onto a second data collection tool (Annexure G) by three health care providers and researchers. Consistency in coding was maintained through regular discussions and crosschecking of coding.

A part of the data collection tool (Annexure F) was used to record information about cases that went to court. Section 233(2) of the Criminal Procedure Act allows any member of the public, on payment of a fee, to obtain copies of court documents (390). Using this provision, court records from both High, as well as all 30 magistrates' courts and a few district courts (for bail information) were obtained. The police dockets usually recorded the court number, court dates and the outcome of the case on their front cover. Once this number was identified, a list of cases for each court was compiled and submitted to the clerk of the criminal court. Under ideal circumstances this list should have produced a copy of the charge sheet for each case, which provides the most comprehensive record of court proceedings, detailing bail applications, postponements and their causes, the (non) appearance of witnesses, the failure of dockets to be brought to court, the focus of further investigations and the response of magistrates and defence attorneys to delays in proceedings. In the absence of the charge sheets, the court book and investigation diaries were reviewed to obtain the data. Court books are used to record the daily proceedings with each entry including the name of the accused, crime for which he or she is accused, outcome of their appearance in court, whether the accused is in custody or out on bail, and the date and courtroom to which the case was postponed or remanded. With both the courtroom number and date, fieldworkers were then able to trace the next appearance of an accused up until the matter was withdrawn, struck off the roll, or tried. So, fieldworkers either photocopied the charge sheet or if this was not available, they copied all information from entries in the court book applicable to the accused. Trial and sentencing transcripts were also reviewed if necessary.

Not every case had information available to complete all three data collection tools, with some cases not having J88 forms (either because it had not been filled out or could not be located) and other matters not having progressed to court. There were also missing dockets, notes from dockets or pieces of information.

4.5. DATA COLLECTION TOOLS

The data collection tools were developed by the primary researchers of the project. These included content expert researchers with qualifications in the criminal justice and health sectors,

who had worked with docket and court documentation and knew what information would be required to answer the study questions. As this was the first study using this methodology and sources of data in South Africa, no other national or international tools were available for use.

The first tool (Annexure F) was used to record information from the police dockets. This included details of the survivor such as her age, race, occupation, home language, caregiver at the time of the rape in children, whether contact details was recorded for her, and what actions she took after the rape e.g. washing herself. The circumstances of the rape were also recorded. This included information on the details leading up to rape, the date, time, and location of the rape, whether the survivor was abducted or resisted in any ways during the rape, whether she attempted to get away, whether the perpetrators were armed or used bodily force, threats to kill, or non-violent coercion, whether vaginal penetration by a penis occurred and the number of penetrations, whether other sexual acts occurred, and finally what were the perpetrators actions following rape. Further details were recorded about the perpetrators (where available) such as the number who participated and colluded in the rape, their relationship to the survivor, whether they previously raped the survivor or had other previous convictions, and the ages of all perpetrators, and the race and occupation of the first perpetrator. Details on the police and investigation procedures were captured e.g. whether witness statements were taken, whether crime scene were visited and samples taken, and if any samples (including those collected by the health care provider) were sent to the laboratory for analysis. If there was a report from the Forensic Science Laboratory, information was collected on which samples was DNA evidence obtained and whether the DNA evidence matched the suspect's DNA. On completion, data were collected on whether the perpetrator was arrested and how this occurred, whether he was charged, taken to trial and the outcome of the case. If cases did not proceed to arrest or a trial, information was gathered on reasons for non-progression. Closed questions were used for well-defined variables, such as age, or where there were a limited range of likely responses. Open questions were used for information on the circumstances of the rape, instructions given during the rape and actions taken afterwards, as these were more likely to differ, and were thus post-coded later by one researcher once all of the data were collected to ensure consistency.

The second tool (Annexure G) was used to code information from the J88 forms. This collected information on the examination performed, history relevant to the rape, findings of the examination and conclusions. Three health care professionals (myself, my supervisor and Nicola Christofides) completed this tool after the end of data collection to maximise consistency.

Finally the data from the court records such as details of bail and all appearances in court, postponements, reasons for withdrawals at court, dates of the trial (if any) and its outcome were coded (Annexure F). If there were multiple perpetrators, the information on their legal processes was recorded separately for each perpetrator. For the purposes of the study, the information found at court was regarded as the most accurate and where information in the docket conflicted with court information, the court information was used.

4.6. DATA ANALYSES

The three data collection tools for each case were entered separately into an EpiInfo 3.3.2 database and then merged. The data were cleaned and any errors identified corrected. In a few cases when discrepancies were found between data sources and could not be resolved, the response was set to missing. The data were then imported into Stata 10.0 where all analysis was done with the svy command to account for the survey study design.

For publication four (Chapter 7), 1 547 cases were included in the analyses as 250 survivors did not have a medical examination, 114 had reported attempted rapes and were not examined, in 138 cases there were no evidence of an examination being done, in three cases the form was destroyed and in 16 cases basic information was missing. The sample for publication five (Chapter 8) was limited to cases where vaginal penetration was reported and which had a J88 completed within 10 days of the rape. This resulted in a sample of 1 472 cases. In 18 of the cases, the woman reported anal penetration as well.

For publication four, non-genital injuries included incised wounds, lacerations, scratches, bruises, and tenderness on any part of the body except the genito-anal area. As there were concerns with the quality in the completion of J88 forms especially the reporting of genito-anal

findings with lower sensitivity, new variables were generated to define the absence or presence of genito-anal injuries. This also took into consideration the fact that some recorded injuries e.g. tenderness is subjective while others, such as redness and swelling, can be due to other causes such as infections. These are a potential problem in both adult and young child survivors. To adjust for this a new variable "injury to the genitals with a skin break" was generated for publication four to include incised wounds, scratches, abrasions or lacerations, if bleeding was seen, or if there was scarring that was believed to be from injuries caused by the rape on the mons pubis, frenulum, clitoris, labia majora, labia minora, perineum, fossa navicularis, hymen, vagina, or anus. For publication five, a combined variable was generated for the presence of absence of genito-anal injuries. This included scratches, abrasions, tears, bruising, haematomas, and bleeding in the genito-anal area, hymenal clefts or swelling, cuts in the genital area and swelling in the anal area based on the sensitivity and specificity of injuries in relation to rape (391). Redness, scars and pain were thus not coded as injuries as these were considered to be non-specific signs. There were no patients who had gunshots or bite marks in the gynaecological examination. Special examination tools were not widely used in facilities at the time and the use of them during the examination was not recorded on the J88 form. It was therefore assumed that the majority of examinations were done with the naked eye and that no toluidine blue dye or colposcopy examinations were done. Anoscopic examinations are not recommended and almost never done unless indicated (136). Finally, for publication four a new variable was created to define injuries with the absence of injuries being the reference group, and the other groups being women with non-genital injuries only, women where a genital injury with a skin break was recorded, and the last group of women who had both non-genital and genital injuries with a skin break recorded.

In both publications four and five (Chapters 7 and 8), age was categorised into an age group of survivors less than 18 years of age, whereas the women 18 years and older was further split for publication five with a third group for women 45 years an older. Smaller age categories were used when the analysis for survivors who had no previous sexual intercourse experience was conducted. In publication four the analysis was done by age groups as the findings varied for the different ages while in publication five, age was categorized to adjust for changing oestrogen levels at different ages (392).

The analyses for publication four (Chapter 7) began by describing how rape cases were processed by the South African criminal justice system before focusing on whether medico-legal findings (recorded injuries and a DNA report) were associated with case progression. The attrition through the legal system at each stage of the investigation of rape cases was calculated from the case being opened with the police, to having the perpetrator arrested, charged, brought to trial, found guilty of rape, attempted rape, or indecent assault, and sentenced. Attrition of medico-legal evidence was also assessed in terms having a J88 completed, having an evidence collection kit completed, having the kit was sent to the laboratory for analysis, having a reference blood sample collected from the suspect and having a DNA report available. Attrition of cases through the legal system was compared for adults (≥18 years) and children (<18 years) using a Pearson Chi-squared test.

Bivariate analyses were then conducted to compare potential confounders in the relationship between the medico-legal evidence and the stages in the investigation of a case (suspect being arrested, trial commencing, and obtaining a conviction). This was done separately for cases where the survivor was an adult or a child. The potential confounders included the age of the survivor and first perpetrator, number of perpetrators, whether the perpetrator was previously convicted, the relationship between the survivor and perpetrator, whether the survivor physically or verbally resisted the rape, whether the survivor was kidnapped or the perpetrator armed, if the case was reported within 72 hours, whether the survivor had any non-genital or genital injuries with a skin break, and the presence of a DNA report. These were considered important as they related to the circumstances of the rape and the possibility of apprehending the perpetrator, they reflected stereotypical rape myths about what constitutes a "real rape", or would have influenced the possibility of identifying injuries or obtaining DNA evidence. A variable on whether the first report statement was taken by the police was included as a proxy of the investigation quality. For the bivariate analysis a Pearson Chi-squared test was done to compare percentages across the outcome variables, while T-tests were used to compare mean ages for the survivor and perpetrator.

To test for whether there was an association between the presence of medico-legal evidence and case outcome (perpetrator arrested, trial commencing and conviction of perpetrator), logistic

regression models were built for cases involving adults or children using the variables that were found to have a p value of <0.1 in the bivariate analysis. The plan was to include any variable that retained a p value of <0.05 in the final models built using stepwise backward elimination while adjusting for age, but none maintained this association in the model on the commencement of a trail, except for having a first report statement taken. The medico-legal evidence included injuries using the four level-injury variable described earlier, and the presence of a DNA report was included in the analysis on convictions, as the report is often only completed when a prosecutor informs the laboratory that a trial is commencing.

In publication five (Chapter 8), the pattern of genito-anal injuries was presented by type and location of the injuries (clitoris and frenulum of clitoris, urethral orifice and paraurethral folds, labia majora and labia minora, posterior fourchette, fossa navicularis, perineum, hymen, vagina and cervix, skin around the orifice, orifice and sphincter/anus) as reported on the J88 form. In this publication it was hypothesised that the absence of genito-anal injuries is influenced by the characteristics related to the survivor, the rape and examination. This included the survivor's age, whether she had previous sexual intercourse or was pregnant in the past, whether she was disabled or was under the influence of drugs or alcohol at the time of the examination. Circumstances of the rape included the length of time the survivor was detained, whether there were multiple perpetrators, the number of times the survivor was penetrated, if the perpetrator was armed, whether the survivor was hurt with a weapon or threatened, whether physical force was used, and whether the survivor resisted. Important information related to the examination that could be obtained from the J88 form was the time between the rape and examination and the qualifications of the health care provider. For this analysis Pearson Chi-squared tests or Fisher's exact tests were first used to test for associations between categorical independent variables and the absence of having injuries. A logistic regression model was then built to test for factors associated with the absence of genito-anal injuries. These included all significant independent variables found in the bivariate analyses while adjusting for the survivor's age and time to examination as these had a potential confounding effect. The following variables were tested in the model for all survivors: the survivor having no previous sexual intercourse and having a previous pregnancy, whether there were multiple perpetrators, the number of penetrations, the relationship between the survivor and perpetrator, and the health care provider qualifications. A

separate model was also built for survivors who had not been sexually active in the past. In this model the variables tested included whether the survivor was disabled, the relationship between the survivor and perpetrator, whether the perpetrator was armed and whether physical force was used. In all models, a p value of <0.05 was considered to be significant for the preservation of variables in the models.

4.7. ETHICAL CONSIDERATION

Permission to review the closed rape dockets was obtained from the national and provincial police departments and at the police stations. All data were de-identified by creating a unique identification number for each case and no identifying information such as names, CAS numbers or identification numbers were captured on the data collection tools. Any identifying information that was found on documentation that was photocopied was blacked out or erased. A separate sheet linking CAS numbers to the identification numbers for the study was kept in order to find the appropriate court records in cases that had progressed to court. These records were kept securely by the principal investigator and destroyed once the court data were collected. All completed data collection tools are kept securely at the MRC. Ethics approval was given for the study by the University of the Witwatersrand's Human Research Ethics Committee: (Medical) (Annexure I). Permission was granted from the primary investigators of the study to use the data for secondary data analysis. Only the analyses of collated data were presented in the articles, and therefore no specific police station (and therefore related cases) were identifiable.

4.8. PROJECT MANAGEMENT

The principal investigator for the study is Ms. Lisa Vetten, with Prof. Rachel Jewkes, Ms. Romi Sigsworth, and Ms. Nicola Christofides as co-investigators. My part in the study started with providing training to fieldworkers on the medico-legal system related to rape cases, and on how to correctly read and copy the J88 form. I contributed to designing the tool for coding the J88 form and provided input on the fieldworker's manual on aspects related to the data collection of the J88 forms. I was one of three health care professionals who coded the J88 forms for data entry. As a co-author of publication four, I assisted in their analyses of data and participated in

the writing of the publication. I designed and conducted the secondary analysis for publication five and primarily wrote the publication. Prof Rachel Jewkes, my supervisor, played a major role in the design of the study, training of fieldworkers, overseeing data collection, data management and undertaking data analyses for the main study report.

The project timelines are presented below:

ACTIVITY	PERSON	TIME
Training of fieldworkers	Principal and co-investigators Other experts including Ruxana Jina	July 2006
Data collection	Fieldworkers	2006 – 2007
Post-coding of data	Allocated researchers (including work done by me)	April 2008
Data entry	Data capturer	March – May 2008
Preliminary data analysis	Principal and co-investigators	May – July 2008
Secondary data analysis for the PhD thesis	Ruxana Jina	January 2013 – December 2014

4.9. LIMITATIONS

Only rape cases that were reported to the police and closed at the time of data collection were included in the study, and this may reduce the generalisability of and bias the findings. However, the strength of the study was that the sample was drawn from an entire province over a year and data were collected from multiple sources and cross-verified where possible. Gauteng, however, is fairly urban and thus findings may differ in more rural provinces in the country.

The greatest limitations with conducting a record review were the inability to find records, finding incomplete records or having incorrect or illegible recordings. For example, J88 forms were found in only 75% of cases. This could be related to practices within police stations where dockets or forms are misplaced or lost, where dockets are not opened for some survivors, or where some survivors are not taken to health services for assessment. However, it may also be related to the inaccessibility of health services or providers to conduct the examination or providers' decisions not to complete the J88 form if they feel that case does not warrant the completion of a form (e.g. old cases or in children where there are suspicions of possible

interference but no clear history, etc.). The quality in the recordings of findings within the documentation could also vary amongst providers and reported injuries may not be indicative of actual injuries as very few facilities in Gauteng province had colposcopies or toluidine blue dye available at the time and the J88 form does not make provision for the recording of examination techniques. It was however important to review this data especially for the association with case progression as this is what is used in the criminal justice system for trial purposes.

Of particular concern was the reporting of non-specific injuries in the genito-anal area (redness, tenderness, bruising) making it difficult to interpret whether injuries occurred as a result of rape considering that consensual sex or other trauma could also result in injuries and a range of vaginal infections could lead to tenderness and redness. To alleviate this problem, all injuries were presented in descriptive statistics but a more defined group of injuries with greater sensitivity were used for inferential statistics in both publications. In identifying factors associated with the absence of injuries, cases going to trial and obtaining a conviction, independent variables were limited to what was recorded and available. Furthermore, as this was a cross-sectional study, I was unable to test for causality. For example, in the fifth publication (Chapter 8), it is unclear if patients with injuries were referred to more experienced doctors for examination who were subsequently noted to have reported more injuries. In addition, there are other potential influencing factors that were not measured as part of the study. In the fifth publication (Chapter 8), the sample was limited to survivors who were examined within 10 days of the rape as it was assumed that there would be very few significant injuries visible beyond this period but this could have differentially excluded some groups of survivors.

CHAPTER 4

RESULTS: EFFECT OF HEALTH SYSTEM MODELS OF CARE ON HEALTH OUTCOMES AND SERVICE UTILISATION OF RAPE SURVIVORS

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1. INTRODUCTION

GBV is a global problem, affecting women from all walks of life. Rape and IPV affects the health and wellbeing of survivors and many subsequently access health services for care. Much of the previous focus of health care services was on supporting the legal processes especially in the acute period, with medical needs and chronic care being somewhat neglected. Comprehensive health care services for survivors covering both acute care and long-term health consequences often require additional skills. This is thus provided by integrating services through the development of referral networks with external service providers (393) or improving service coordination internally (394). This includes the horizontal delivery of services, where patients are seen by multiple providers within the same facility, or a vertical delivery of services where survivors access one site to be consulted by multiple providers (394).

Not surprisingly, the packaging of these services and the manner in which they are delivered have varied across countries. Details of service models that are available in project and research reports (262, 265, 266, 395) describe the inclusion of additional staff such as social workers (267) and rape advocates into services (396), the reorganisation of services (54), the development of team approaches with the sexual assault response teams (397), strengthening referrals and collaborations with social and legal services (2), and the establishment of specialised or OCCs (276–278, 282, 292, 296, 344). A number of these have reported on the challenges of implementing the tested models with some offering provider or survivor perspectives as well. Other studies have also documented survivors' experiences with services and their preferences for care (75, 398, 399). The SANE Programmes have noted an improvement in quality of care and legal outcomes (309, 311)

after implementation, and in South Africa conviction rates are higher in the Thuthuzela one stop model that were established with that objective in mind (37). Furthermore, in-service training interventions have been found to improve knowledge, and to some degree, practice of health care providers (331, 332, 336, 363), yet it is unclear if a model of care has improved outcomes for women receiving the service. The aim of this review was to therefore evaluate the effects of health system model of care in female survivors of rape or IPV in terms of health outcomes, rape or IPV recurrence, provision of related services, and referrals.

2. METHODOLOGY

2.1. INCLUSION CRITERIA

A systematic review was done focusing on health care organisations or providers who deliver services to female survivors of rape or IPV. Interventions included any health systems level programmes providing services to women who had experienced rape or IPV with any comparison data being available. This included RCTs, controlled trials, quasi-experimental studies, parallel groups, cohort studies, case-control studies, and pre-post intervention studies. The review focused on the following outcomes: rates of physical, psychological and reproductive health outcomes, rape or IPV recurrence, rates of providing related services, and rates of referrals. There were no limits placed on timelines for follow-up. Articles could be published in English, French, Spanish or Japanese. Articles were excluded from the review if they were purely descriptive or did not provide comparison data for a health systems programme, the primary focus of the intervention was child or elder abuse, interventions were based outside of the health care setting, interventions targeted the abuser or men as victims, or the intervention focused narrowly on screening, advocacy, counselling, or mental health interventions.

2.2. IDENTIFICATION OF STUDIES

The following databases were searched for studies published between 1 January 1990 and 17 November 2014: EMBASE, Medline, Psych Info, CINAHL. As the researchers were also interested in health systems models described in grey literature the search was also extended to Criminal Justice, Global Index Medicus, Dissertation/Theses, Lilacs and WPRIM up to June 2011 with no year limits for searches on Psych Books and regional databases (EMRO IMEMRO, SEARO-IMSEAR and AFRO-AIM). The search criteria used to search the databases included rape and synonyms (e.g. sexual violence, sexual assault, sexual abuse, etc.), partner violence and synonyms (IPV, domestic violence, spousal abuse, battered women, etc.), any health-related setting (hospital, emergency department, clinic, etc.), health care, public health, and program/programme or intervention or health services. The initial search identified 26 645 potential articles and documents but no systematic review was found that addressed the research question. Duplicate documents and those that were not on the topic were excluded, using specific search phrases and by reviewing each article title. This left 869 abstracts to be reviewed, of which 166 warranted review of the full publication after articles that were not on the topic were excluded. A total of 11 published articles were included in the final review.

2.3. DATA EXTRACTION

One reviewer worked on the dataset to prepare the review while two researchers assisted in the identifying and summarising the publications through an extraction process. Data were extracted on the study design, setting, sample size, demographics of sample, intervention and comparator, follow-up period, and measures and results of outcomes. The studies were also assessed for quality using the Grades of Recommendation, Assessment, Development and Evaluation Working Group (GRADE) criteria (380).

2.4. DATA ANALYSES

Due to differing methodologies and measures of outcomes, a meta-analysis of outcomes was not feasible.

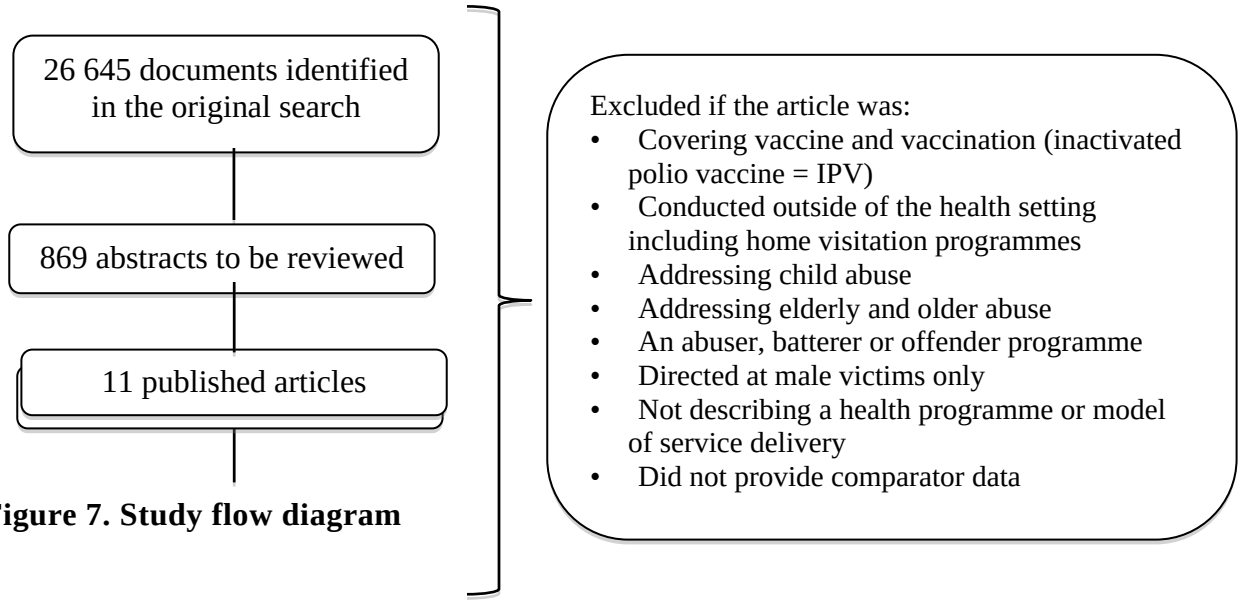


Figure 7. Study flow diagram

3. FINDINGS

A number of studies evaluated only the expansion of screening programs into general services and as such these studies were excluded from the review. The findings of ten studies are presented in the 11 articles that have been identified (Annexure J) (381, 382, 400–408).

3.1. SAMPLE

All of the studies comprised of models of care addressing IPV with none specifically focusing on post-rape care. Five of the studies were conducted in the USA, two were based in the UK, and one each was conducted in Australia, New Zealand and Spain. No studies were found from LMIC. Only one study comprised of a cluster RCT (402). This was also the only study that focused specifically on improving referral networks. The remaining studies could be described as service integration interventions (Table 11) with seven studies having a pre-post study design (381, 382, 400, 401, 403–406) and two following a quasi-experimental approach (407, 408). No

studies were found that compared the effects of services provided at an OCC to that of another model of service provision.

The sizes and compositions of samples also varied substantially, with the smallest sample size comprising of 71 women and 111 children (405) while the largest included 10 961 records that were reviewed in two hospitals over three time periods (382). In a few articles, the sample size was not clearly presented (400, 404) and the characteristics of the study population were also not always described (381, 382, 400, 404, 406, 407).

3.2. INTERVENTIONS

Interventions included a combination of activities that could be grouped as input or process activities (Table 11). All of the studies except one (405) included a training component. Other interventions included an enquiry or screening process (400–404, 406, 407, 408) and the development of resources such as information material on referral sources and posters (381, 382, 401–404, 406). New policies or procedures were developed in a few studies (381, 382, 401, 404, 406, 408) as well as the new documentation or changes to documentation (381, 382, 400, 401, 403). Very few studies attempted to improve the referral system within (404, 407, 408) or outside of the institution (402). Additional staff (381, 382, 400, 407, 408) and support (403, 408) were provided in a couple of studies. Only one study used a different approach of allocating survivors to a single doctor and offering them preferential entry to health programmes (405). Four studies clearly described the length of the interventions. It ranged from one month in one study (405), three months in another study (406) and a year in two studies (402, 404).

Table 11. Summary of studies that evaluated the effect of a model of care

AUTHOR	APPROACH	INTERVENTION										OUTCOME		
		INPUT					PROCESS							
		New policies/ protocols	New staff	New form/ document	Change to form/ document	New resource material (pamphlets / posters)	Training	Enquiry/ Screening procedure	Referral in-house	Referral out	Other	Health outcomes	Providing related services	Referrals
Basu (400)	Horizontal integration: New service in ED		+ (2 advocates)	+			+	+			Private interview room, new electronic coding system for previous IPV identification			+
Coyer (401)	Horizontal integration: New service in a facility	+			+	+	+	+						+
Fanslow (381, 382)	Horizontal integration: New service in ED	+	+ (staff nurse)	+		+	+						+	+
Feder (402)	External integration: New service in general practices with external referral					+	+	+		+ (to advocate)	Practice champion, feedback on referrals			+
Harwell (403)	Horizontal integration: New service in a facility			+		+	+	+			Additional follow-up and support to first 4 community health centres (CHC) that were trained			+
McCaw (404)	Horizontal integration: New service in a facility with internal	+				+	+	+	+ (to mental health clinician)		Media outreach, crises response team from local agency			+

	referral													
Muñoz (405)	Horizontal integration: New service in a facility										Allocation to single doctor & paediatrician, removed obstacles for care, preferential entry to health programmes, social worker assessment	+	+	+
Ramsden (406)	Horizontal integration: New service in ED	+				+	+	+						+
Short (407)	Horizontal integration: New service in a facility with internal referral		+ (paid WomandKind staff & volunteer advocates)				+	+	+ (to WomanKind staff and advocates)					+
Wiist (408)	Horizontal integration: New service in prenatal clinic with internal referral	+	+ (abuse counsellor)				+	+	+ (to abuse counsellor)		Nurse trainer visited weekly to offer support			+

3.3. OUTCOMES

No studies were found that provided data on the effects of a health system intervention on rape or IPV recurrence. One study was found that evaluated the effects on providing related services to survivors and their children, and to some extent on health outcomes (405). In this study there were significant improvements in the number of visits to the family doctor, social worker and to programmes, and in the number of women who had hepatitis B vaccination, social and family assessments, family planning, cervical cytology and analytical blood tests. For their children, there were significant increases and improvements in the number of visits to paediatricians, vaccinations, child health, psychomotor development and somatometric assessments. The percentage of women without health problems reported on history significantly declined, as did the percentage taking prescriptions. However, this was a small study, involving a selected group of women who were based in shelters and accessing health services in Spain.

A second study was found that reported on the number of interventions that were provided to IPV survivors after one year of a project being conducted in two emergency departments in Auckland, New Zealand (382). Interventions included examination and/or treatment for presenting or past physical or sexual assault, assessment for sexual assault, homicide risk assessment, assessment for depression, discussion on contacting the police, legal options and a safety plan, and offer a referral to social services. The authors found a significant difference in the proportion of survivors that were offered at least two interventions between the study and control site at post-intervention but not at follow-up a year later.

Ten studies evaluated the effect of a health system intervention on referral rates (Table 12). Of these, seven articles reported increases in referrals rates but did not present significance levels (381, 400, 401, 404, 406–408). In four studies there were significant improvements in referrals (402, 403, 405, 407) with one showing a non-significant increase in referrals within the facility (403). Of these studies, the cluster RCT in general practices presented the strongest evidence (402). The intervention comprised of the following components: training, resources, screening through electronic prompts, referral to a named agency advocate, practice champions and

feedback on referrals. The authors reported significant increases in the incident rate ratio for recorded referrals and referrals received by agencies 12 months post-intervention for the intervention group compared to the control group.

Table 12. Outcome of studies that evaluated the effect of a model of care on referral rates

AUTHOR	REFERRAL OUTCOME	NOTES
Basu (400)	↑ referral rate over 1 year period after intervention	No statistical testing done
Coyer (401)	↑ referral rate 6 months after intervention	No statistical testing done
Fanslow (381, 382)	↑ offers of police contact and referral rate from pre to post-intervention at intervention site	No statistical testing done
Feder (402)	↑ incident rate ratio for intervention group 12 month post training	Significant finding at p value < 0.05
Harwell (403)	↑ in-house referral rate 6 months post training ↑ out referral rate 6 months post training	Non-significant increase at p value < 0.05 Significant finding at p value < 0.05
McCaw (404)	↑ referrals to domestic violence specialist post intervention (?time)	No statistical testing done
Muñoz (405)	↓ percentage not referred 11 months post-intervention	Significant finding at p value < 0.05
Ramsden (406)	↑ in-house referrals during 3 months of intervention	No statistical testing done
Short (407)	↑ referral rate (actual data not presented) at intervention sites ↑ referrals compared to control facilities post-intervention	Significant finding at p value < 0.05 No statistical testing done
Wiist (408)	↑ referrals at 3 months and 15 months post-intervention	No statistical testing done

4. DISCUSSION

A systematic review of the literature found that there were no models of care for post-rape services that were suitably evaluated for health and violence outcomes of survivors and for use of other services. In addition all of the studies that met the inclusion criteria for selection were from HIC. Diverse models of care from LMIC are fairly well documented and although some evaluations have been conducted, the focus has been on the feasibility and practicality of the models with a few reporting on changes in the delivery of care, as opposed to health outcomes of the survivor.

This vacuum limits the potential transferability of successful models. Yet, the review found an absence of high quality studies, and therefore no specific health service delivery model for post-rape or IPV care can be recommended although this should not be equated with a lack of effectiveness (274).

As strong referral linkages to and from providers is often required, but lacking, in the delivery of comprehensive care, it is not surprising that most of the studies reported on changes in referral rates. The most common features of these interventions included having training for staff, including a screening process for patients, providing resources and having policies or protocols implemented. Many also made additional staff available such as study nurses, counsellors and advocates. Although one would consider recommending these features in future work (15) not all would be feasible in LMIC and only a few studies evaluated the individual components of their interventions. In these cases, the outcomes for the evaluation were very different e.g. change in knowledge or practice for the training component of an intervention (407). Furthermore it is still not clear what drives the integration process for services that extend beyond biomedical care, especially in relation to the acceptance and adoption of these services by health care providers (83).

The number of referrals is used in most studies as a proxy measure for other services that are potentially being provided. However, information on the quality and content of the services that was received, and in some studies the proportion of patients who attended the referral, is still lacking. In the RCT, women who were referred reported that the services that they received from advocates were sometimes different from what they informed on (409). An important consideration would also be whether increases in referrals are clinically relevant as no study looked at the health outcomes of the women who were referred or whether the service was of benefit to the survivor (410). In specialised centres in the UK approximately 40% of survivors were already known to mental health services yet the majority of centres still struggled to refer survivors who required further mental health support (411). Furthermore, challenges with ensuring patients follow through with a referral are a common problem in the delivery of all health services. In South Africa, 66% of women who were referred for colposcopy services based on their pap smear results made an appointment and 48% actually attended the service (412). Another matter to consider is whether measuring

the number of referrals is really an indicator of better quality services, or does it just reflect the ability of the PHC provider to shunt "the problem" out of their department. Even in studies where referrals did increase and findings were significant, the number of women who were referred was small implying that accessibility to health services and identification of survivors who require the necessary care is still a challenge. Interventions are either not being implemented as they were intended to, or they are not as successful as they potentially could be. The cost-effectiveness of these resource-intensive interventions needs to be measured as was done for the trial in the UK, and applicability to low and middle-income settings with limited resources deliberated. Sustainability in a real-world setting is not always achievable, as researchers who implemented a systems level intervention found when they removed an IPV advocate so that survivors could be referred to the facility's social worker while continuing with other efforts of their intervention (413). The study found that identification rates increased significantly during the intervention period but then dropped back to baseline levels during the sustainability period.

Medium to long-term outcomes in survivors of rape and IPV need to be better defined and measured in studies unless we are willing to accept service level outcomes as a measure of effectiveness although these are intermediaries to improved health care for survivors. Yet loss to follow-up is generally high and contacting survivors later can also pose dangers (414). A follow-up qualitative study done with the women who had participated in the RCT reported that some women were untraceable because of incorrect contact information or fears regarding their safety (409). Researchers need to consider these complexities when planning for the retention and follow-up of survivors in outcome evaluation research.

This was the first systematic review that was done on the effects of a health system model of care yet there were some limitations in doing the review. All of the studies included in the review were based in HIC and most were of low quality. Only one was based on a RCT while all of the other articles comprised of methodologically weaker study designs with substantial limitations. Many had poor presentation of data with inadequate data analyses. Only descriptive studies were identified from LMIC with some programme evaluations being found as well, although the review

included various databases to ensure a better opportunity for identifying studies from these settings.

5. CONCLUSION

There is a need for more studies with robust study designs and larger samples. More research of high quality is required to assess the effectiveness of service delivery models, in improving outcomes for female survivors of rape and IPV. Many lessons can already be learnt from the work done globally especially in LMIC where implementation is challenging with increased resource limitations. A number of models are already being implemented without adequate evaluation, some of which are resource intensive such as OCCs, and understanding the long-term value of the delivery model could justify its establishment and expansion. A bigger focus needs to be placed on post-rape care services with measurement of relevant outcomes e.g. pregnancy, sexually transmitted infections, HIV incidence, and measures of mental health.

CHAPTER 5

RESULTS: KNOWLEDGE AND CONFIDENCE OF SOUTH AFRICAN HEALTH CARE PROVIDERS REGARDING POST-RAPE CARE: A CROSS-SECTIONAL STUDY[12]

1. BACKGROUND

In South Africa, the majority of rape survivors are cared for in the public sector at PHC level. Post-rape care should be provided by trained doctors and nurses (27), yet studies have shown that not all providers receive training. Most are only trained at an undergraduate level, and such training often focuses only on the forensic aspects of post-rape care, thus neglecting the medical needs of patients (49, 54). A number of training programmes have been developed, ranging from undergraduate and postgraduate programmes to informal in-service training initiatives (48, 49) and in 2007 the National Department of Health commissioned the development of a standardized training curriculum for health care providers as piecemeal training had resulted in varied levels of knowledge and skills among providers (49, 50).

The National Department of Health aimed to use the curriculum to equip doctors and nurses to comprehensively provide post-rape care. The curriculum was developed by a number of local experts under the coordination of the Gender and Health Research Unit of the MRC. This work was based on reviews of both national and international training programmes. The newly developed curriculum finally comprised of ten days of interactive training and a one day practicum, covering all aspects of post-rape care including epidemiology, human and sexual rights, communication, medical management of the survivor, examination and evidence collection, follow-up care, laws and court procedures, monitoring and evaluation of services, and vicarious trauma. Vicarious trauma is known as compassion fatigue that is felt by providers who work with traumatized patients and can po

[12] Jina R, Jewkes R, Christofides N, *et al*. 2013. Knowledge and confidence of South African health care providers regarding post-rape care: a cross-sectional study. *BMC Health Serv Res*., 13:257.

tentially affect the physical and mental well being of the provider (415). The curriculum was tested in a pilot programme that was held in eight of the nine provinces in the country.

In developing the curriculum, a number of issues came to the forefront. Firstly, what is the current knowledge and confidence of health providers working in post-rape care and would the curriculum improve this, what are the factors that influence knowledge, confidence and care offered by providers, and finally, which providers should we be training to work in post-rape care services?

A review of international post-rape training programmes showed that there were marked differences in the courses offered to providers (297, 302, 308, 332–334, 336, 345, 357, 362), with lengths ranging from a 45 minute lecture to medical students (357) and 2 hours training on clinical forensic medicine in the United States of America (USA) (333), to a 6 month rotation in forensic medicine for emergency room physicians in Australia (334). The nursing programmes especially the SANE programmes in the USA (297, 332) and Canada (297, 302) were found to be the most established with a 5 – 7 day didactic training programme followed by clinical exposure in a practical setting. The content of the courses have also varied, with a focus on the examination of survivors and evidence collection. Some of these programmes have reported on improvements in provider knowledge and skills after training but these studies were conducted with small groups in limited settings and did not include a mixed group of providers in a national programme (332, 336, 357, 362). No studies were found from developing, low resourced settings. Furthermore, no studies were found that investigated other factors influencing knowledge, skills and confidence in providers managing post-rape care survivors.

Very few studies have looked at the providers working in post-rape services. A review of the SANE programmes has shown some positive findings with SANEs providing more comprehensive care and examinations than what was traditionally provided by the hospital emergency department (309, 362), that evidence collection kits were better completed by SANEs than by non-SANE nurses or physicians, that police laid more charges and there were higher conviction rates with longer average sentences in SANE cases compared to pre-SANE cases, and that there was an

improvement in the relationship between the medical and legal professionals after SANE programmes were implemented (309). A previous study with women in South Africa on experiences and preferences for post-rape care reported a preference for doctors over nurses. While the women in this study also preferred to have a female provider (75), there were mixed findings regarding this in a review (399) focusing on women's expectations and experiences with interpersonal violence services. What is very clear is that survivors wish to have a non-judgemental, compassionate and sensitive provider (75, 399).

The objectives of this paper are thus to identify the factors associated with higher knowledge and confidence in health care providers working in post-rape care services at the commencement of training and to reflect on the implications of this for training and other efforts being made to improve services.

2. METHODS

A cross-sectional study was undertaken with data collected during four training sessions that were held from February to May 2008. One hundred and fifty-two providers from eight provinces attended the training. The Western Cape provincial Department of Health declined to participate in the study. Health care providers who were selected by provincial managers to attend the training were either doctors who had completed internship or professional nurses with midwifery qualifications. All providers had some previous exposure to post-rape care services.

Providers who underwent the pilot training completed self-administered questionnaires. These had questions on social and demographic characteristics, the manner in which rape services were provided, the workload in relation to post-rape care services, prior training on counselling and post-rape care services, confidence in providing post-rape care, gender attitudes, attitudes about issues related to rape, and levels of empathy. The questionnaire made use of questions that had previously been tested in research conducted by the Gender and Health Research Unit, including an instrument used in a situation analysis of sexual assault services (1), and a questionnaire used in a survey of men's health and relationships (11). For the

purposes of this study, only data from the questionnaires completed prior to the interactive training component are presented.

Socio-demographic and background information was collected on sex, age, rank, and the province where the health care provider was working, the type of facility where they were working, and the number of years they had been working in total and at the current facility. Data were also collected on the proportion of rape survivors seen by the provider and whether the provider had seen a rape survivor and completed the necessary legal documentation (J88 form) in the last three months. Information on where undergraduate training occurred and whether the provider received further training on post-rape care and counselling was obtained.

A rape attitude score (Cronbach's alpha 0.82) based on 21 statements (385) was obtained using a four level Likert response from 'strongly agree' to 'strongly disagree'. Examples of statements used in the score included: "many rapes happen because women lead men on", "sex workers cannot really be raped", and "a woman who has been raped has a serious medical problem". The Likert scores were added for each of the statements to develop a total rape attitude score that could range from 21 to 84, with a higher score indicating a more appropriate attitude to rape. A gender attitude score (Cronbach's alpha 0.76) was similarly developed using the same Likert responses, but based on another 21 statements (386). Three examples of statements used for this score are: "a man should have the final word about decisions in his home", "a woman's most important role is to take care of her home and cook for her family", and "there are times when a woman deserves to be beaten". Again the score could range from 21 to 84, with a higher score indicating that the provider was more gender sensitive. These scores were constructed from work done by Burt (385), and Pulerwitz and Barker (386).

An empathy score (Cronbach's alpha 0.77) was also calculated using four statements, which were adapted from work done by Abbey et al (387). These had a five level Likert response scale ranging from 'doesn't describe me well' to 'describes me well'. Two statements included here were "when I see someone being taken advantage of, I feel protective toward them", and "I often have tender, concerned feelings for people less fortunate than me". The Likert scores for each statement were added to develop a

score with a range from 4 to 20. A higher score indicated that the provider had greater empathy.

Men were also asked about perpetration, and women about experience of rape or IPV using a version of the WHO violence against women instrument (12). This had been adapted for use with men in the Eastern Cape (11, 13). It included two questions related to physical abuse, one to emotional abuse, and four to sexual abuse. For example, female providers were asked about being slapped, pushed, shoved, hit, kicked or having something thrown at them by a partner. They were also asked about whether a partner had ever threatened to hurt them or use a weapon against them. They were then asked about whether they had ever been tricked into having sex with a man, whether they had ever agreed to have sex with a man after he told lies, threatened to end the relationship, or pleaded; whether they had ever had sex when they had not consented or were forced, and whether they had ever slept with a man or boy when they were too drunk to say whether they wanted to or not.

Knowledge was assessed using 75 multiple-choice questions covering the various aspects of post-rape care. These covered all aspects of the curriculum material and were developed and reviewed by staff at the Gender and Health Research Unit. The questions were piloted on a group of ten medical doctors, after which some changes were made. In addition, nine questions that had a particularly high failure rate through all pilot sessions were excluded from the final data analysis, resulting in a total of 66 questions.

Health care providers reported on their confidence in providing ten aspects of post-rape services, using a score of 1 to indicate 'no confidence' and 10 to indicate 'total confidence' in providing the service. Questions covered examination, evidence collection, and appearing in court. Both the knowledge and confidence scores were converted into percentages and categorized. Providers with a percentage score of 50 or more were considered to have high levels of knowledge and those with a percentage score of 80 or more were considered to have high levels of confidence. These cut points were based on the mean scores for knowledge and confidence levels.

Data were entered and analysed using Stata 10. Descriptive statistics were first conducted on the baseline characteristics of the health care providers in terms of background, experience, knowledge and confidence, after which bi-variable analysis was carried out in order to test for factors associated with high knowledge and confidence separately. Variables with a p value of <0.20 were included in the candidate models and backward selection was used to develop the two final multivariable models on factors associated with high knowledge and confidence. In the final models, variables were retained with a p value of less than or equal to 0.05.

Ethics approval was obtained from the Human Research Ethics Committee: (Medical) of the University of the Witwatersrand (Approval No. M071140). The health care providers were given an information sheet and were asked to sign informed consent when they returned the completed questionnaire. Participation in the study was thus optional and utmost care was taken to ensure that the anonymity of the study participants was maintained.

3. RESULTS

In total, 124 health care providers (81.6% of those trained) completed pre-training questionnaires. The mean age of the providers was 41.7 years with a range from 24 to 64 years. The majority of providers trained were female (70.2%) and professional nurses (68.3%). Of the 39 doctors who were trained, six were completing their community service year, which is a compulsory second year of working in the public sector after completion of medical school (Table 13). Forty-seven of the 87 female providers (56.6%) had experienced some form of IPV in their lifetime, while 13 of the 37 male providers (36.1%) had perpetrated acts of IPV. Sexual abuse was the most common form of abuse experienced (38.5%) and perpetrated (30.6%), followed by physical abuse (37.4% and 22.2%). About a third of the providers felt that rape was not a serious medical problem (n=34, 28.8%).

Table 13. Demographic and other background of health care providers

	Total	Knowledge			Confidence		
	n (%) / mean (SD[$])	High (≥50%) n (%) / mean (SD[$])	Low (<50%) n (%) / mean (SD[$])	p value	High (≥80%) n (%) / mean (SD[$])	Low (<80%) n (%) / mean (SD[$])	p value
Sex (N=124)							
Male	37 (29.8%)	13 (44.8%)	23 (26.4%)	0.064	10 (30.03%)	21 (31.3%)	0.916
Female	87 (70.2%)	16 (55.2%)	64 (73.6%)		23 (69.7%)	46 (68.7%)	
Age (N=123)	41.7 (8.8)	37 (8.0)	43 (8.0)	0.002	40 (8.0)	42 (10)	0.462
Rank (N=123)[*]							
Doctor	39 (31.7%)	17 (60.7%)	21 (24.1%)	0.000	12 (36.4%)	24 (36.4%)	1.000
Nurse	84 (68.3%)	11 (39.3%)	66 (75.9%)		21 (63.6%)	42 (63.6%)	
Province (N=124)[#]							
Eastern Cape	20 (16.1%)	2 (6.9%)	17 (19.5%)	0.025	4 (12.1%)	10 (14.9%)	0.034
Free State	13 (10.5%)	6 (20.7%)	4 (4.6%)		8 (24.2%)	5 (7.5%)	
Gauteng	15 (12.1%)	3 (10.3%)	12 (13.8%)		6 (18.2%)	8 (11.9%)	
KZN	20 (16.1%)	8 (27.6%)	12 (13.8%)		3 (9.1%)	11 (16.4%)	
Limpopo	15 (12.1%)	3 (10.3%)	12 (13.8%)		2 (6.1%)	9 (13.4%)	
Mpumalanga	13 (10.5%)	3 (10.3%)	9 (10.3%)		7 (21.2%)	5 (7.5%)	
North West	13 (10.5%)	0 (0.0%)	12 (13.8%)		0 (0.0%)	7 (10.5%)	
Northern Cape	15 (12.1%)	4 (13.8%)	9 (10.3%)		3 (9.1%)	12 (17.9%)	
Rape or IPV (N=124) [#]							
None	64 (51.6%)	14 (48.3%)	47 (54.0%)	0.406	14 (42.4%)	34 (50.8%)	0.639
Experienced rape or IPV (female providers only)	47 (37.9%)	10 (34.5%)	33 (37.9%)		15 (45.5%)	24 (35.8%)	
Perpetrated rape or IPV (male providers only)	13 (10.5%)	5 (17.2%)	7 (8.1%)		4 (12.1%)	9 (13.4%)	
Rape attitude score (N=94)	65.9 (8.4)	69.0 (7.2)	64.5 (8.7)	0.027	68.1 (6.6)	66.4 (8.6)	0.371
Gender attitude score (N=99)	69.5 (7.1)	70.5 (5.9)	68.8 (7.4)	0.269	71.3 (5.5)	69.2 (7.8)	0.189
Empathy score (N=111)	16.2 (3.6)	16.2 (3.7)	16.3 (3.6)	0.870	16.7 (4.0)	16.1 (3.7)	0.472

Sample sizes vary due to missing data

[*]One doctor sessional, three nurses in administrative roles: managerial/coordinators

[#] Fisher Exact test; [$] SD: Standard deviation

The majority (76.0%) of providers were working at the PHC level (clinics, community health centres (CHC) and district hospitals) (Table 14). Just under half of the providers (44.4%) worked in facilities that had a crisis centre. The providers had a median of 14.5 years of experience with a range of 1 to 36 years, and the median number of years at the current facility was 5 years (range 0 – 36 years). About half of the providers (49.6%) had examined a survivor and had completed a J88 form in the three months preceding the training. About 60% of providers had been trained in providing post-rape care, while 79% reported having been trained in counselling. The levels of knowledge were low with a median percentage score on the knowledge assessment of 37.3% and a range of 0% to 65.3%. A quarter of the providers (n=29) scored 50% or more. Providers scored less than 50% on questions related to communication, examination and evidence collection of adult survivors, management of child survivors, mental health care, prevention and management of pregnancy post-rape, and vicarious trauma (Table 15). Confidence was much higher, as providers had a median confidence percentage of 75.4% with a range of 10% to 100%. A third of the providers (n=33, 33.0%) had confidence levels of 80% or more (Table 14).

Table 14. Experience and training backgrounds of health care providers

	Total	Knowledge			Confidence		
	n (%) / mean (SD[$])	**High (≥50%)** n (%) / mean (SD)	**Low (<50%)** n (%) / mean (SD)	**p value**	**High (≥80%)** n (%) / mean (SD)	**Low (<80%)** n (%) / mean (SD)	**p value**
Type of facility (N=121)[#]							
Clinic/CHC	39 (32.2%)	7 (25.0%)	31 (36.5%)	0.661	11 (33.3%)	20 (30.8%)	0.798
District hospital	53 (43.8%)	13 (46.4%)	35 (41.2%)		16 (48.5%)	30 (46.2%)	
Regional hospital	19 (15.7%)	5 (17.9%)	13 (15.3%)		5 (15.2%)	9 (13.9%)	
Tertiary hospital	10 (8.3%)	3 (10.7%)	6 (7.1%)		1 (3.1%)	6 (9.2%)	
Crisis centre in facility (N=124)	55 (44.4%)	16 (55.2%)	34 (39.1%)	0.130	22 (66.7%)	23 (34.3%)	0.002
Total time in service (N=120)[#]							
<10	35 (29.2%)	14 (50.0%)	21 (25.0%)	0.054	10 (30.3%)	21 (32.3%)	1.000
10 – 19	47 (39.2%)	9 (32.1%)	36 (42.9%)		13 (39.4%)	25 (38.5%)	
≥20	38 (31.7%)	5 (17.9%)	27 (32.1%)		10 (30.3%)	19 (29.2%)	
Service time at current facility (N=119)[#]							
<10	72 (60.5%)	20 (74.1%)	50 (59.5%)	0.030	23 (71.9%)	41 (65.1%)	0.520
10 – 14	26 (21.9%)	7 (25.9%)	18 (21.4%)		6 (18.8%)	10 (15.9%)	
≥15	21 (17.7%)	0 (0.0%)	16 (19.1%)		3 (9.4%)	12 (19.1%)	
Examined survivor and completed J88 in last 3 months (N=123)	61 (49.6%)	21 (72.4%)	37 (42.5%)	0.005	24 (72.7%)	29 (43.3%)	0.006
Proportion of survivors seen who come to facility (N=116) [#]							
<20%	44 (37.9%)	11 (37.9%)	37 (43.5%)	0.694	8 (24.2%)	33 (49.3%)	0.027
21% – 40%	20 (17.2%)	7 (24.1%)	13 (15.3%)		4 (12.1%)	10 (14.9%)	
41% - 60%	27 (23.3%)	5 (17.2%)	19 (22.4%)		9 (27.3%)	15 (22.4%)	
61% - 100%	25 (20.5%)	6 (20.7%)	16 (18.8%)		12 (36.4%)	9 (13.4%)	
Country trained for undergraduate[#]							
South Africa	106 (86.2%	24 (82.8%)	76 (87.4%)	0.542	30 (90.1%)	55 (83.3%)	0.374
Elsewhere	17 (13.8%)	5 (17.2%)	11 (12.6%)		3 (9.1%)	11 (16.7%)	
Trained on counselling (N=124)	98 (79.0%)	25 (86.2%)	68 (78.2%)	0.429	29 (87.9%)	53 (79.1%)	0.408
Trained on post-rape care (N=120)	72 (59.5%)	20 (69.0%)	46 (54.8%)	0.181	26 (78.8%)	35 (53.0%)	0.013
High knowledge (≥50%) (N=116)	29 (25.0%)						
High confidence (≥80%) (N=100)	33 (33.0%)	9 (33.3%)	20 (30.8%)	0.810			

Sample sizes vary due to missing data; [#] Fisher Exact test;

Table 15. Knowledge by topic

Topic	Number of questions	Percentage median score (Interquartile range) (IQR)
Context of sexual assault in South Africa	6	50% (0 – 83.3%)
Laws and court processes	6	50% (16.7 - 83.3%)
Sexual rights E.g. Emma describes herself as transgendered. Which one of the following definitions most accurately describes what the term "transgendered"? a. She is romantically and sexually attracted to both women and men b. She is confused about her sexual orientation and thinks she might be attracted to women c. She is a person born with a combination of male and female reproductive organs d. She was born with a male body but has started sexual reassignment surgery so that her body matches her gender identity	5	60% (0 – 100%)
Communication E.g. Which of the following is an example of good listening? a. "So in summary, you were hijacked while on the way home from work…." b. "Did you say that you were from Westdene? My grandparents live there" c. "Do not worry about the court case. Everything will be fine" d. "Let me tell you what to do"	3	33.3% (0 – 100%)
Provision of medical care	4	50% (0 – 100%)
Examination and evidence collection of adult sexual assault survivors	8	25% (0 – 75%))
Management of sexually assaulted children E.g. Which one of the following is definitely indicative of assault in a child? a. An absent posterior fourchette b. A hymenal bump c. A posterior attenuated hymen d. An anal tag	6	33.3% (0 – 83.3%)
Mental health care	9	33.3% (0 – 55.6%)
Prevention and management of pregnancy post-rape E.g. A 22 year old women presents to the health care facility. She has been raped by a stranger last night. Her last menstruation was three weeks ago and she is medically well. The emergency contraceptive regimen of choice for her is: a. Norlevo 2 tabs (levonorgestrel 1500µg) stat po b. Ovral 4 tabs (ethinyl estradiol 100µg/levonorgestrel 500µg) stat po c. Nordette 2 tabs (ethinyl estradiol 125µg/levonorgestrel 300µg) stat po d. Triphasil 4 tabs (ethinyl estradiol 125µg/levonorgestrel 500µg) stat po	6	33.3% (16.7 – 83.3%)
Prevention and management of infectious diseases	4	50.0% (0 – 75%)

Topic	Number of questions	Percentage median score (IQR)
Prevention and management of HIV post-rape E.g. A patient presents 12 hours after being gang raped. Pre-test HIV counselling is carried out but she refuses to have an HIV test What should the health care provider do? a. Refuse to give her PEP b. Ask the patient to return in 3 days so that she can be pre-test counselled again c. Provide a 3 day supply of PEP and ask the patient to come back in 3 days and pre-test counsel again d. Provide a 7 day supply of PEP and ask the patient to come back every week for a month for PEP that she will have three more opportunities to be pre-test counselled	4	50% (0 – 100%)
Documentation	2	50% (0 – 100%)
Follow-up	1	100% (0 – 100%)
Vicarious trauma E.g. Countertransference occurs when: a. Health care providers experience symptoms of trauma themselves from work with trauma survivors b. Health care providers bring into their work with patients aspects of their own past history c. Health care providers become very judgmental and unsympathetic d. Health care providers working with trauma survivors develop burn out	3	33.3% (0 – 100%)

Sixty one percent of providers with high levels of knowledge were doctors compared to 24% of providers with low knowledge (Table 13). On the other hand, 76% of providers with low knowledge were nurses compared to 39% with high knowledge (p value 0.000). Younger providers (mean of 37 years vs. 43 years) were found to have significantly higher levels of knowledge (p value 0.002). Significant interprovincial differences were noted in knowledge levels (p value 0.025) with KZN and Free State having a high proportion of providers with high levels of knowledge (28% and 21% respectively) compared to the proportion from these provinces among those who had low levels of knowledge (14% and 5% respectively). Disproportionately few providers in the Eastern Cape and North West Provinces were among those who had high levels of knowledge (7% and 0% respectively), compared to the proportion among those who had low levels of knowledge (20% and 14% respectively). The providers with a higher rape attitude score were also found to more often have significantly higher levels of knowledge (p value 0.027). None of the providers who had been working at their current facility for more than 15 years had high levels of knowledge, but this group constituted 19% of those who had low levels of knowledge;

while 74% of those who were in the facility for less than 10 years had high levels of knowledge compared to 60% who had low levels of knowledge (p value 0.030) (Table 14). Finally, providers who had examined a survivor and completed a J88 form in the last three months were found to have higher levels of knowledge (72% vs. 43% of those who had not, p value 0.005).

The pattern of distribution of provider confidence differed from that of knowledge (Table 13). In the Free State and Mpumalanga 24% and 21% of providers were found to have high levels in confidence, compared to 8% and 8% of providers with low levels of confidence. Limpopo contributed only 6% of providers with high levels of confidence, and the North West, none, compared to those with low levels of confidence (13% and 11% respectively) (p value 0.034). Providers who worked in a facility with a crisis centre more often had high confidence (67% vs. 34% of those not doing so, p value 0.002) as had those who had examined a survivor and completed a J88 form in the last three months (73% vs. 43%, p value 0.006) (Table 15). Trained providers were found to have high levels of confidence (79% vs. 53% not trained, p value 0.013) although no association was found with higher levels of knowledge (Table 14). In addition, a high confidence level was not found to be associated with a higher level of knowledge; 33% of providers with high knowledge had high levels of confidence, as did 31% of the providers with low knowledge (p value 0.810) (Table 14).

The following variables were tested in the final multivariable model looking at factors associated with higher levels of knowledge: sex, age, rank, experience or perpetration of interpersonal violence, rape attitude score, total time in services, examination of a survivor and completion of a J88 form in the last three months, and having been previously trained on counselling (Table 16). With the final multivariable model, it was found that older providers (OR 0.94, 95% CI 0.88 – 1.00) and nurses (OR 0.40, 95% CI 0.23 – 0.69) had lower odds of having high levels of knowledge while providers with a more appropriate rape attitude score (having a higher rape attitude score) had a greater odds of having high levels of knowledge (OR 1.10, 95% CI 1.01 – 1.19) (Table 16).

In terms of confidence levels, providers who worked in a facility with a crisis centre, those who had examined a survivor and completed a J88 form in the last three months, those who had been trained on providing post-rape care in the past and the proportion of survivors seen by the provider met the criteria to be tested in the multivariable model. In the final multivariable model, providers who had worked in a facility with a crisis centre (OR 3.08, 95% CI 1.19 – 7.99) and those who had examined a survivor and completed a J88 in the last three months (OR 3.57, 95% CI 1.29 – 9.89) had a greater odds of having higher levels of confidence. Providers who had seen more than 60% of survivors who came to the facility were also found to have greater odds of having high confidence compared to providers who had seen less than 20% of survivors (OR 4.31, 95% CI 1.23 – 15.10). Previous training was not found to be associated with higher knowledge or confidence levels. Furthermore, levels of knowledge were not associated with confidence levels (Table 16).

Table 16. Regression models for factors associated with knowledge and confidence

	Knowledge				Confidence			
	Univariate	**p value**	**Multivariable**	**p value**	**Univariate**	**p value**	**Multivariable**	**p value**
Sex								
Male	-				-			
Female	0.44 (0.18 – 1.06)	0.067			1.05 (0.43 – 2.59)	0.916		
Age	0.91 (0.86 – 0.97)	0.003	0.94 (0.88 – 1.00)	0.053	0.98 (0.94 – 1.03)	0.458		
Rank								
Doctor	-		-		-			
Nurse	0.45 (0.29 – 0.71)	0.001	0.40 (0.23 – 0.69)	0.001	1.00 (0.65 – 1.54)	1.000		
Province								
Gauteng	-				-			
Mpumalanga	1.33 (0.22 – 8.22)	0.757			1.87 (0.39 – 8.89)	0.433		
North West	-				-			
Limpopo	1.0 (0.17 – 5.99)	1.000			0.30 (0.05 – 1.91)	0.200		
KZN	2.67 (0.57 – 12.57)	0.215			0.36 (0.07 – 1.91)	0.232		
Northern Cape	1.78 (0.32 – 10.01)	0.514			0.33 (0.06 – 1.73)	0.192		
Eastern Cape	0.47 (0.07 – 3.27)	0.445			0.53 (0.11 – 2.56)	0.433		
Free State	6.0 (1.00 – 35.91)	0.050			2.13 (0.46 – 9.94)	0.335		
Rape or IPV								
None	-				-			
Experienced rape or IPV (female providers)	1.65 (0.68 – 4.00)	0.269			1.52 (0.62 – 3.72)	0.362		
Perpetrated rape or IPV (male providers)	3.88 (1.10 – 13.77)	0.036			1.08 (0.28 – 4.09)	0.911		
Rape attitude score	1.08 (1.01 – 1.15)	0.030	1.10 (1.01 – 1.19)	0.026	1.03 (0.97 – 1.09)	0.368		
Gender attitude score	1.04 (0.97 – 1.11)	0.267			1.05 (0.98 – 1.12)	0.189		
Empathy score	0.99 (0.88 – 1.11)	0.869			1.05 (0.93 – 1.18)	0.469		

	Knowledge				Confidence			
	Univariate	**p value**	**Multivariable**	**p value**	**Univariate**	**p value**	**Multivariable**	**p value**
Type of facility*								
Clinic/CHC	-				-			
District hospital	1.64 (0.58 – 4.65)	0.347			0.97 (0.37 – 2.52)	0.950		
Regional hospital	1.70 (0.46 – 6.36)	0.428			1.01 (0.27 – 3.77)	0.988		
Tertiary hospital	2.21 (0.44 – 11.08)	0.333			0.30 (0.03 – 2.85)	0.296		
Crisis centre in facility								
No	-				-		-	
Yes	1.92 (0.82 – 4.48)	0.133			3.83 (1.58 – 9.24)	0.003	3.06 (1.18 – 7.93)	0.021
Total time in service								
<10	-				-			
10 – 19	0.38 (0.14 – 1.01)	0.053			1.09 (0.40 – 2.99)	0.864		
≥20	0.28 (0.09 – 0.89)	0.032			1.11 (0.38 – 3.24)	0.855		
Service time at current facility								
<10	-				-			
10 – 14	0.97 (0.35 – 2.68)	0.957			1.07 (0.34 – 3.32)	0.907		
≥15	-				0.45 (0.11 – 1.74)	0.246		
Examined survivor and completed J88 in last 3 months								
No	-				-		-	
Yes	3.55 (1.42 – 8.89)	0.007			3.49 (1.41 – 8.64)	0.007	3.30 (1.24 – 8.81)	0.017
Proportion of survivors seen who come to facility								
<20%	-				-		-	
21% – 40%	1.81 (0.58 – 5.66)	0.307			1.65 (0.41 – 6.65)	0.481	1.33 (0.30 – 6.01)	0.709
41% - 60%	0.89 (0.27 – 2.92)	0.841			2.48 (0.80 – 7.67)	0.116	2.26 (0.68 – 7.52)	0.185
61% - 100%	1.26 (0.40 – 4.00)	0.693			5.5 (1.73 – 17.53)	0.004	4.31 (1.23 – 15.10)	0.022

	Knowledge				Confidence			
	Univariate	**p value**	**Multivariate**	**p value**	**Univariate**	**p value**	**Multivariate**	**p value**
Country trained undergrad								
South Africa	-				-			
Elsewhere	1.44 (0.45 – 4.56)	0.536			0.50 (0.13 – 1.93)	0.315		
Trained on counselling								
No	-				-			
Yes	3.62 (1.39 – 9.41)	0.008			1.92 (0.58 – 6.36)	0.298		
Trained on post-rape care								
No	-				-			
Yes	1.84 (0.75 – 4.50)	0.184			3.29 (1.25 – 8.63)	0.016		

4. DISCUSSION

The study has shown that the knowledge of providers working in post-rape services was low, highlighting an urgent need to improve training in this field in the country. In particular, specific gaps in areas of knowledge need to be targeted in these training programmes. Knowledge and confidence was not associated with being trained previously which reflects poorly on the previous training received. Crucially, levels of knowledge were higher among doctors than nurses and those who had a more appropriate attitude towards rape, and perhaps were thus more motivated to learn. No previous studies on training for post-rape care including both doctors and nurses have been done, and neither were there studies found that assessed attitudes of providers in post-rape care services, and therefore these findings could not be compared to other studies. Knowledge seems to be critically dependant on attitude, which highlights the need for educating providers on rape and the seriousness of the problem. Confidence levels were much higher than knowledge, which is potentially dangerous; especially as the knowledge level regarded as 'high' here had a low threshold (50% or more).

The training programme included a range of providers from junior staff to those who were experienced and regarded as ranked among our national experts. Yet there were still substantial gaps in the knowledge of providers and many providers were not completely confident in delivering every aspect of post-rape care. The study also found that providers who were previously trained did not have significantly greater levels of knowledge and confidence, but that confidence levels were disproportionately higher than levels of knowledge in all of the providers. This could be related to the manner in which training was offered in the country through a piecemeal approach, with poor or absent content, giving providers a sense of assurance in providing service yet in fact not improving knowledge on post-rape care.

In addition to levels of knowledge, provider attitudes when delivering services are important for patients (75, 399). Interestingly, providers with a more appropriate attitude towards rape had significantly greater odds of having high levels of knowledge. Studies have found that rape and IPV are not considered to be a health priority for providers (49, 68, 416), and some studies have found that where health care providers have a more sympathetic and appropriate attitude towards

rape survivors, there is an indication of better clinical practices (417, 418). A previous study conducted in South Africa found that providers who perceived rape to be a serious medical problem provided a better quality of care (49). However, no study has looked at the association of provider attitudes with knowledge. This is important as it impacts on decisions related to how providers should be trained, as attitudes are linked to improved knowledge and potentially better service provision.

Working in a facility with a crisis centre and being involved in the care of survivors was found to be significantly associated with higher levels of confidence. It has been reported that the experience of working with the same types of patients improves clinical skills (419) and therefore can lead to higher levels of confidence. Strengthening practical skills through the management of survivors and a supportive environment may also benefit providers working in crisis centres. It would be important to know how well providers working in crisis centres respond to further training to increase knowledge, in which case there would be evidence supporting this model to potentially offer better care.

However, it is still a matter of some concern that many providers do not have adequate levels of knowledge. Providers who had worked for more than 15 years in the same facility were found to have low levels of knowledge and similarly, older providers had a lower odds of having high knowledge levels. This indicates the need for continuous training and development of providers during the in-service period. There is a risk that providers become complacent and if they are not informed of current updates in the literature over time, they may not change their practices. As this discipline is constantly changing and new practices are being developed based on current evidence, there is always a need for continuous professional updates. Nurses were also found to have a lower odds of having high knowledge levels, and this is reflective of the current health service organization in South Africa, where the role of nurses in the provision of post-rape care has not been adequately defined. Thus nurses tend to receive minimal training and in most areas are only involved peripherally in the provision of post-rape care.

A high percentage of providers had experienced violence as victims or perpetrators, and startlingly a third of male providers had committed rape themselves. This highlights the

importance of being extremely watchful for vicarious trauma, as affected providers are particularly vulnerable. There is also a need to understand the impact of having perpetrated violence against women on the care provided by male providers. This could be manifested through the provision of poor quality care with a lack of empathy, or could result in emotional problems for the provider through having to provide care for survivors. Exploration of this aspect was limited by the small sample size.

The generalisability of the findings in this study is limited, as some of the providers of the training were selected because they were known to be experts who would themselves later train, and this may have resulted in a bias towards a more knowledgeable and confident group. The Western Cape Department of Health declined to participate in the pilot study and therefore there were no providers from this province included in the study. Some of the data were sensitive in nature but the questionnaires were self-administered to limit underreporting and ensure confidentiality. There was also a potential for recall bias. The knowledge and confidence measures were developed and used for the first time in this study. Although piloted on a small group of doctors prior to the study, these measures still need to be further assessed for reliability. Nine questions that were found to produce high levels of failure were dropped from the knowledge score. Providers did not respond to all questions in the questionnaire and this resulted in missing data for some of the variables. Providers were only asked about their provincial location and therefore no distinction can be made between providers working in urban and rural settings within the provinces. The small sample size limited further analysis of the data, for example, by sex of the doctors.

5. CONCLUSIONS

The study indicates that there were gaps in knowledge even in providers who had been previously trained and that, although confidence was generally high, there were very poor levels of knowledge. A comprehensive standardized training curriculum for post-rape care services was undoubtedly needed in the country. It is clear that if the objectives of the National Sexual Assault Policy (27) and The Criminal Law (Sexual Offences and Related Matters) Amendment Act (420) are to be achieved; much has to be done to increase the number of providers who are

trained on the management of post-rape care, to ensure that training is comprehensive, and to ensure that providers who are trained remain knowledgeable and skilled in current best practices. The development of this curriculum was critical and if found to result in improvements after the pilot training, this should then be expanded in a national training programme with scheduled refresher courses. Improving providers' understanding of rape is important as this study has shown that providers who have a more appropriate attitude towards rape have higher levels of knowledge in providing post-rape care.

CHAPTER 6

RESULTS: A CROSS SECTIONAL STUDY ON THE EFFECT OF POST-RAPE TRAINING ON KNOWLEDGE AND CONFIDENCE OF HEALTH PROFESSIONALS IN SOUTH AFRICA[13]

1. INTRODUCTION

In 2007 a training programme on caring for survivors of rape was developed for the South African Department of Health using national and international experts (421). This was done to address past inadequacies in training and to improve the delivery of care in the country. The 10-day training began with the circumstances of rape, barriers to reporting, health consequences, the social construct of gender and sexual rights (Table 17). This was followed by the provision of medical care including mental health care, the prevention and management of pregnancies and infectious diseases, and follow-up care. Record keeping was covered with the collection of forensic samples, and the legal aspects included an overview of the law and expert witness testimony. Other topics were included such as monitoring and evaluation. Various teaching approaches were used to minimize didactic training. These comprised of video clips, photo galleries, exercises, completion of medico-legal (J88) forms and participation in mock trials.

A few training programs have been developed on rape care, but the majority targeted specific groups of professionals (332, 334, 336, 345, 357, 362), covered mainly forensic care, or were very short (332, 345, 357, 362). The SANE programs, which are the most developed, are only provided in Canada and the USA (297, 302). There have been reports on improvements in attitudes, knowledge and clinical practice with some programs (308–310, 316, 332, 334, 336, 357, 362), though none have been conducted in developing countries or at a large scale with both doctors and nurses. There have been other training programs described both in developed and developing countries but these have either addressed IPV more broadly, or have been

[13] Jina R, Jewkes R, Christofides N, *et al*. 2014. A cross-sectional study on the effect of post-rape training on knowledge and confidence of health professionals in South Africa. *Int J Gynaecol Obstet*., 126(2):187-92.

incorporated into larger health system interventions. For example, a programme in one hospital in South Africa, which showed, improved efficiency, quality or care and patient satisfaction included five interventions of which one involved training (54). In such cases improved outcomes cannot be assumed to be as a result of the training alone.

Table 17. Overview of ten-day training programme

Days of teaching	Content
Day 1	Circumstances, contexts & magnitude of sexual assault in South Africa The social construction of gender; Barriers and consequences to reporting rape Health consequences of sexual assault and rape
Day 2	Sexual rights and looking at specific needs of survivors The legal framework for rape and sexual offences
Day 3	Developing communication skills Initial approach to the survivor an obtaining consent History taking
Day 4	Introduction and background to mental health care CBT and in vivo exposure Imaginal exposure
Day 5	Prevention and management of pregnancy Prevention and management of infectious diseases Prevention of HIV Communication with rape survivor on pregnancy and infectious diseases including HIV Thinking through adherence
Day 6	Introduction to examining survivors and overview of genital anatomy Examination of the adult survivor Special examination techniques Special considerations during the examination of survivors
Day 7	Non-genital injuries Introduction to sexual assault in children Examination of the child, features of rape and interpretation of findings
Day 8	Collection of forensic evidence Introduction to documentation and completion of J88 forms
Day 9	Follow-up care Introduction to the criminal justice system Giving expert testimony
Day 10	Understanding vicarious trauma and countertransference Monitoring and evaluation

The objectives of this paper are to determine whether the pilot training programme resulted in improvements in knowledge and confidence of health professionals, and to distinguish baseline factors related to changes in knowledge and confidence.

2. MATERIALS AND METHODS

The data for this cross-sectional study was collected over four training sessions in 2008. Provincial managers from the Eastern Cape, Free State, Gauteng, KZN, Limpopo, Mpumalanga, North West, and the Northern Cape were asked to send 20 health professionals each to the training, with some additional people attending from the National Department of Health. This sample was limited by budget, but this size would be sufficient to identify an increase in percentage knowledge from 50% to 70% with 80% power. In total of 152 professionals attended the training. Criteria for selection included doctors who had completed a year of internship (one year of work post qualification) and nurses with qualifications in midwifery. The doctors and nurses had to have had some experience related to rape care services although their level and time of the experience was not restricted. Health professionals completed self-administered questionnaires at the beginning and end of the training through which background information was collected.

A gender-related attitude score was calculated using 21 statements with a 4-level Likert response, while a rape attitude score was calculated in the same way using another 21 statements. These scores were developed from research conducted in Brazil (386). An empathy score, with a highest possible score of 20 was calculated using four statements with a 5-level Likert response. This score was based on the works of Abbey et al (387). For all of the scores, a higher value indicated a more appropriate attitude or greater empathy.

The perpetration of rape or IPV by men and the experience thereof by women was obtained using an adapted violence against women instrument (388). Questions on the perpetration of rape or IPV had previously been tested with men in South Africa (114, 119, 130). Some research has looked at the influence of IPV on the quality of services provided by health professionals (68, 69, 422) but no study was found that assessed the role of rape or IPV on training outcomes. Experience of rape or IPV was thus included in this study as a possible factor that could influence openness and interest in training leading to differential changes in knowledge and confidence.

Information on the provision of rape care services was obtained, including the percentage of survivors seen and whether the health professional had examined a rape survivor in the last three months. Health professionals were also asked about previous training on counselling and rape care, and about where they had obtained their undergraduate qualifications. Many of the administered questions had been tested in previous studies (49).

Knowledge was calculated using 66 multiple choice questions as nine questions with high failure rates were excluded. Health professionals reported on confidence in conducting examinations, collecting evidence and appearing in court using ten statements with a score from one to ten. A higher score indicated more confidence in delivering the service. More details on the variables have been presented previously (421).

Stata 12 (StataCorp, College Station, Texas) was used for data analysis. All data collection tools that could be linked were used for the analysis including those that had more than one question blank. Hence, a number of health professionals had missing data for the gender-related attitude score, rape attitude score, empathy score and confidence score. If the score had one missing value, it was replaced with an average of the remaining score. This was done in 16 instances for the gender-related attitude score, 17 instances for the rape attitude score, five instances for the empathy score and 10 instances for the confidence score. When more than one question was missing, no replacements were made.

Percentages were calculated for knowledge and confidence, and new variables were generated for the change in percentage scores from the commencement to the completion of the training. A 4-level variable was also developed that grouped health professionals by baseline knowledge and confidence levels (Table 18). The first group consisted of health professionals with high knowledge (score of $\geq$50%) and confidence (score of $\geq$70%) at baseline, followed by group two with low knowledge (score of <50%) and high confidence (score of $\geq$70%), group three with high knowledge and low confidence, and finally group four with low knowledge and confidence at baseline. These cut-off levels were based on the mean baseline percentage scores.

Table 18. Groupings of health professionals by baseline knowledge and confidence percentage scores (N=96)

		Baseline confidence levels			
		High (>70%)		**Low (≤70%)**	
Baseline knowledge level	**High (>50%)**	Group 1:	14 (14.6%)	Group 3:	12 (12.5%)
	Low (≤50%)	Group 2:	36 (37.5%)	Group 4:	34 (35.4%)

Descriptive statistics were performed followed by bivariable analysis to explore baseline factors related with changes in knowledge and confidence levels. Two models were developed for knowledge and confidence using backward selection, a conventional approach to model-building where a p value of <0.05 was used to retain variables in the final models.

All general ethical principles were adhered to, participation was voluntary and written informed consent was obtained. All data collection tools were linked by a unique code that was generated by the professionals to ensure anonymity. The University of the Witwatersrand's Human Research Ethics Committee: (Medical) approved the study (Approval No. M071140).

3. RESULTS

The data collection tools could only be linked in 112 professionals (73.7%), which included mainly nurses (n=76, 68%) and female professionals (n=80, 71%) (Table 19). The mean age was 41.6 years and there was a fair distribution of professionals from each province, with the lowest number (n=11, 10%) from the Free State. Most of the professionals worked at district hospitals (45%) and at clinics or CHCs (35%), while 43% were working in facilities that contained a Crisis Centre. Two-thirds (69%) of the health professionals had worked for more than 10 years, and in the last three months 52% had examined a survivor of rape and completed the medico-legal (J88) form. The vast majority (87%) had completed their undergraduate training in South Africa, while 79% reported to have been trained previously on counselling and 60% on rape care. There were no major differences in the background information in the study sample compared to the entire sample.

Table 19. Demographic information and service experience of health professionals at baseline

SAMPLE WITH ALL QUESTIONNAIRES AND MCQS COMPLETED		ENTIRE SAMPLE	
	n (%) / mean (SD)		n (%) / mean (SD)
Sex (N=112)		**Sex (N=147)**	
Male	32 (28.6%)	Male	43 (29.3%)
Female	80 (71.4%)	Female	104 (70.8%)
Age (N=111)	41.6 (9.0)	**Age (N=145)**	41.4 (8.9)
Rank (N=112)		**Rank (N=144)**	
Doctor	36 (32.1%)	Doctor	44 (30.6%)
Nurse	76 (67.9%)	Nurse	100 (69.4%)
Province (N=112)		**Province (N=147)**	
Free State	11 (9.8%)	Free State	15 (10.2%)
Eastern Cape	15 (13.4%)	Eastern Cape	21 (14.3%)
Gauteng	17 (15.2%)	Gauteng	18 (12.2%)
KZN	16 (14.3%)	KZN	21 (14.3%)
Limpopo	13 (11.6%)	Limpopo	18 (12.2%)
Mpumalanga	13 (11.6%)	Mpumalanga	16 (10.9%)
North West	12 (10.7%)	North West	17 (10.6%)
Northern Cape	15 (13.4%)	Northern Cape	21 (14.3%)
Rape or IPV (N=110)		**Rape or IPV (N=143)**	
None	53 (48.2%)	None	69 (48.3%)
Experienced rape or IPV (female professionals only)	45 (40.9%)	Experienced rape or IPV (female professionals only)	57 (39.9%)
Perpetrated rape or IPV (male professionals only)	12 (10.9%)	Perpetrated rape or IPV (male professionals only)	17 (11.9%)
Rape attitude score (N=95)	64.3 (8.1)	**Rape attitude score (N=110)**	64.1 (8.4)
Gender attitude score (N=99)	70.0 (7.0)	**Gender attitude score (N=113)**	69.4 (7.1)
Empathy score (N=102)	16.4 (3.3)	**Empathy score (N=116)**	16.1 (3.8)
Type of facility (N=112)		**Type of facility (N=143)**	
Clinic/CHC	39 (34.8%)	Clinic/CHC	50 (35.0%)
District hospital	50 (44.6%)	District hospital	62 (43.4%)
Regional hospital	14 (12.5%)	Regional hospital	21 (14.7%)
Tertiary hospital	9 (8.0%)	Tertiary hospital	10 (7.0%)
Crisis centre in facility (N=112)	48 (42.9%)	**Crisis centre in facility (N=146)**	61 (41.8%)
Total time in service (N=111)		**Total time in service (N=144)**	
<10	34 (30.6%)	<10	44 (30.6%)
10 – 19	40 (36.0%)	10 – 19	53 (36.8%)
≥20	37 (33.3%)	≥20	47 (32.6%)
Service time at current facility (N=108)		**Service time at current facility (N=140)**	
<10	68 (63.0%)	<10	87 (62.1%)
10 – 14	23 (21.3%)	10 – 14	30 (21.4%)
≥15	17 (15.7%)	≥15	23 (16.4%)

SAMPLE WITH ALL QUESTIONNAIRES AND MCQS COMPLETED		ENTIRE SAMPLE	
	n (%) /		n (%) /
Examined survivor and completed J88 in last 3 months (N=112)	59 (52.3%)	**Examined survivor and completed J88 in last 3 months (N=147)**	69 (46.9%)
Proportion of survivors seen who come to facility (N=111)		**Proportion of survivors seen who come to facility (N=143)**	
<20%	46 (41.1%)	<20%	62 (43.4%)
21% – 40%	20 (18.4%)	21% – 40%	24 (16.8%)
41% - 60%	25 (22.5%)	41% - 60%	30 (21.0%)
61% - 80%	14 (12.6%)	61% - 80%	16 (11.2%)
81% - 100%	6 (5.4%)	81% - 100%	11 (7.7%)
Country trained undergrad (N=112)		**Country trained undergrad (N=146)**	
South Africa	97 (86.6%)	South Africa	127 (87.0%)
Elsewhere	15 (13.4%)	Elsewhere	19 (13.0%)
Trained on counselling (N=109)	86 (78.9%)	**Trained on counselling (N=122)**	96 (78.7%)
Trained on rape care (N=106)	64 (60.4%)	**Trained on rape care (N=121)**	72 (59.5%)

Health professionals showed a significant increase in percentage knowledge from 40% at baseline to 51% at the post-training (p value <0.001), with significant improvements in all categories except knowledge related to the laws and court processes (47% to 48%) and follow-up care, the latter of which was already fairly high at baseline (70% to 76%) (Table 20). Furthermore, the final percentage knowledge score was still below 50% for a number of categories. The change in percentage knowledge levels was fairly similar in all categories when the study sample was compared to the entire sample.

Table 20. Changes in percentage knowledge of health professionals by content areas

	SAMPLE WITH ALL QUESTIONNAIRES AND MCQS COMPLETED (N=112)				ENTIRE SAMPLE (N=158)			
	BASELINE Mean (95% CI) (N=112)	**POST-TRAINING Mean (95% CI) (N=112)**	**Difference**	**p value**	**BASELINE Mean (95% CI)**	**POST-TRAINING Mean (95% CI)**	**Difference**	**p value**
Total knowledge score	39.8 (37.4 - 42.2)	51.2 (48.7 - 53.8)	11.4	0.000	37.0 (34.7 - 39.4)	47.6 (44.8- 50.3)	10.6	0.000
Topics								
Context of sexual assault in South Africa	39.9 (35.4 - 44.4)	53.4 (49.3 - 57.5)	13.5	0.000	37.1 (33.3 - 41.0)	48.9 (45.1 - 52.7)	11.8	0.000
Laws and court processes	47.2 (43.6 - 50.7)	48.1 (44.3 - 51.9)	0.9	0.699	44.1 (40.7 - 47.5)	45.5 (42.0 - 49.0)	1.4	0.567
Sexual rights	56.1 (51.1 - 61.3)	62.1 (57.3 - 67.0)	6	0.028	51.0 (46.5 - 55.5)	56.5 (51.9 - 61.0)	5.5	0.048
Communication	46.7 (41.3 - 52.2)	60.1 (55.5 - 64.8)	13.4	0.000	44.1 (39.5 - 48.6)	56.8 (52.3 - 61.2)	12.7	0.000
Provision of medical care	48.7 (44.0 - 53.4)	59.6 (54.6 - 64.6)	10.9	0.000	45.1 (40.9 - 49.3)	55.1 (50.6 - 59.6)	10	0.000
Examination and evidence collection of adult sexual assault survivors	29.0 (25.5 - 32.5)	41.0 (37.1 - 44.8)	12	0.000	26.5 (23.5 - 29.5)	38.0 (34.4 - 41.5)	11.5	0.000
Management of sexually assaulted children	33.8 (29.8 - 37.7)	48.8 (44.7 - 52.9)	15	0.000	30.8 (27.3 - 34.3)	48.3 (44.4 - 52.2)	17.5	0.000
Mental health care	28.8 (25.8 - 31.7)	39.0 (35.3 - 42.7)	10.2	0.000	28.0 (25.4 - 30.6)	37.1 (33.8 - 40.3)	9.1	0.000
Prevention and management of pregnancy post-rape	41.7 (37.8 - 45.6)	62.8 (58.2 - 67.4)	21,1	0.000	38.9 (35.4 - 42.4)	57.9 (53.6 - 62.2)	19	0.000
Prevention and management of infectious diseases	37.5 (33.3 - 41.7)	43.5 (39.5 - 47.5)	6	0.016	34.7 (30.9 - 38.4)	39.4 (35.8 - 43.0)	4.7	0.043
Prevention and management of HIV post-rape	46.7 (42.1 - 51.2)	62.7 (58.4 - 67.0)	16	0.000	43.7 (39.7 - 47.7)	56.6 (52.3 - 60.9)	12.9	0.000
Documentation	29.0 (23.2 - 34.9)	65.2 (58.5 - 71.8)	36.2	0.000	25.9 (21.1 - 30.8)	59.8 (53.8 - 65.8)	33.9	0.000
Follow-up	69.6 (61.0 - 78.3)	75.9 (67.8 - 83.9)	6.3	0.238	62.7 (55.0 - 70.3)	67.7 (60.4 - 75.1)	5	0.287
Vicarious trauma	30.7 (25.5 - 35.8)	39.9 (34.1 - 45.7)	9.2	0.024	29.3 (25.1 - 33.6)	35.4 (30.6 - 40.3)	6.1	0.0659

The percentage confidence level in health professionals significantly increased in all categories with the greatest percentage increases for completing a J88 form (absolute increase of 17%), completing an evidence collection kit for an adult survivor, examining a paediatric survivor (both with an absolute increase of 15%), and discussing common psychological symptoms and coping strategies (absolute increase of 14%) (Table 21). No significant differences were noted when percentage confidence scores were compared between the study sample and all professionals who attended the training.

In the final regression model, a lower empathy score was significantly associated with a greater change in percentage knowledge levels (p value = 0.005) (Table 22). In terms of change in percentage confidence, we found that health professionals who were working at regional level facilities showed a significantly greater change in percentage confidence levels (p value = 0.047) compared to those who worked at clinics or CHCs. Health professionals with high knowledge and low confidence, and those with low knowledge and confidence levels (p value <0.001) had a significantly greater change in percentage confidence levels than those with high knowledge and confidence levels (Table 22).

Table 21. Changes in percentage confidence of health professionals by content areas

	SAMPLE WITH ALL QUESTIONNAIRES AND MCQS COMPLETED				ENTIRE SAMPLE			
	BASELINE Mean (95% CI)	**POST-TRAINING Mean (95% CI)**	**Difference**	**p value**	**BASELINE Mean (95% CI)**	**POST-TRAINING Mean (95% CI)**	**Difference**	**p value**
Total confidence score (N=95; N=97)*	67.4 (62.5 - 72.3)	79.1 (75.6 -82.7)	11.7	0.000	67.4 (62.6 - 72.2)	79.4 (76.0- 82.9)	12.0	0.000
Topics								
Examining an adult survivor (N=98, N=100)	67.7 (61.0 - 74.3)	76.4 (71.2 - 81.6)	8.7	0.006	67.9 (61.1 - 74.1)	76.9 (71.8 - 82.0)	9.3	0.003
Completing an evidence collection kit with an adult (N=97; N=99)	61.9 (54.4 - 69.4)	77.3 (72.1 - 82.5)	15.4	0.000	61.5 (54.1 - 68.9)	77.5 (72.3 - 82.6)	16.0	0.000
Completing a J88 form (N=97; N=99)	62.4 (55.2 - 69.6)	79.4 (74.6 - 84.2)	17.0	0.000	62.0 (54.9 - 69.2)	79.5 (74.8 - 84.2)	17.5	0.000
Examining a paediatric survivor (N=97; N=99)	50.0 (43.5 - 56.5)	64.5 (59.0 - 70.0)	14.5	0.000	49.6 (43.2 - 56.0)	65.3 (59.8 - 70.7)	15.7	0.000
Providing pre-test counselling for HIV (N=96; N=98)	76.1 (70.3 - 82.0)	83.9 (79.2 - 88.5)	7.8	0.005	76.6 (70.9 - 82.4)	84.2 (79.7 - 88.7)	7.6	0.005
Discussing common psychological symptoms and coping with these (N=96; N=98)	66.4 (61.0 - 72.1)	80.2 (76.1 - 84.3)	13.8	0.000	66.3 (60.7 - 72.0)	80.6 (76.6 - 84.7)	14.3	0.000
Supporting adherence with PEP (N=96; N=98)	76.5 (71.2 - 81.7)	85.6 (81.6 - 89.7)	9.1	0.001	76.8 (71.7 - 82.0)	85.9 (82.0 - 89.9)	9.1	0.001
Talking with survivors about sexuality, sexual health and condom use after rape (n=97; N=99)	75.3 (69.7 - 80.8)	86.8 (83.0 - 90.6)	11.5	0.000	75.8 (70.3 - 81.2)	87.1 (83.4 - 90.8)	11.3	0.000
Talking with parents about supporting children who have been sexually assaulted (N=97; N=99)	72.5 (66.9 - 78.1)	82.6 (78.4 - 86.7)	10.1	0.001	72.3 (66.8 - 77.8)	82.9 (78.8 - 87.0)	10.6	0.000
Managing HIV prevention in patients who have other medical conditions (N=97; N=99)	76.2 (70.9 - 81.5)	86.2 (82.5 - 89.9)	10.0	0.001	76.0 (70.8 - 81.2)	86.5 (82.8 - 90.1)	10.5	0.000
Explaining findings in court (N=97; N=99)	53.9 (46.8 - 61.0)	66.8 (61.5 - 72.1)	12.9	0.000	53.9 (47.0 - 60.9)	66.8 (61.5 - 72.0)	12.9	0.000

* The first sample size is for the sample with all questionnaires and MCQs completed and the second sample size is for the entire sample.

Table 22. Regression models to identify factors associated with change in percentage knowledge and confidence of health professionals

	Change in Knowledge (N=93)[a]				Change in Confidence (N=95)[b]			
	Coefficient (95% CI)	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**
Sex								
Male	-				-			
Female	0.3 (-5.2 - 5.7)	0.927			5.8 (-3.5 - 15.2)	0.220		
Age	0.1 (-0.2 - 0.3)	0.614			0.0 (-0.4 - 0.5)	0.866		
Rank								
Doctor	-				-			
Nurse	1.2 (-4.1 - 6.5)	0.644			-3.6 (-12.6 - 5.4)	0.430		
Province								
Free State	-				-			
Eastern Cape	-0.1 (-10.2 - 9.9)	0.983			13.0 (-4.0 - 29.9)	0.132		
Gauteng	4.9 (-4.9 - 14.7)	0.320			15.8 (-0.6 - 32.2)	0.058		
KZN	-0.8 (-10.7 - 9.1)	0.874			24.3 (7.6 - 40.9)	0.005		
Limpopo	1.3 (-9.0 - 11.7)	0.799			3.2 (-14.6 - 20.9)	0.724		
Mpumalanga	7.2 (-3.2 - 17.5)	0.174			5.5 (-11.5 - 22.5)	0.522		
North West	9.8 (-0.7 - 20.4)	0.068			7.8 (-10.5 - 26.1)	0.401		
Northern Cape	-5.7 (-15.7 - 449)	0.266			15.2 (-1.2 - 31.6)	0.068		
Rape of IPV								
None	-				-			
Experienced rape or IPV (female professionals)	-2.9 (-8.2 - 2.4)	0.284			-2.2 (-11.4 - 6.9)	0.628		
Perpetrated rape or IPV (male professionals)	-1.0 (-9.4 - 7.4)	0.809			-14.0 (-28.0 - -0.1)	0.049		
Rape attitude score	0.0 (-0.3 - 0.4)	0.944			0.2 (-0.4 - 0.8)	0.469		
Gender attitude score	0.2 (-0.2 - 0.6)	0.341			0.2 (-0.4 - 0.9)	0.476		
Empathy score	-1.0 (-1.7 - -0.2)	0.017	-1.2 (-1.9 - -0.4)	0.005	-1.0 (-2.3 - 0.3)	0.133		

	Change in Knowledge (N=93)[a]				Change in Confidence (N=95)[b]			
	Coefficient (95% CI)	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**
Type of facility								
Clinic/CHC	-				-		-	
District hospital	2.4 (-3.2 - 8.0)	0.391			-1.4 (-11.1 - 8.4)	0.783	1.2 (-6.9 - 9.2)	0.775
Regional hospital	-2.8 (-10.9 - 5.3)	0.494			7.3 (-6.9 - 21.4)	0.309	11.9 (0.2 - 23.6)	0.047
Tertiary hospital	-4.5 (-14.1 - 5.2)	0.361			11.6 (-4.9 - 28.0)	0.167	9.7 (-4.0 - 23.4)	0.162
Crisis centre in facility								
No	-				-			
Yes	-0.6 (-5.6 - 4.4)	0.823			-3.8 (-12.4 - 4.9)	0.387		
Total time in service								
<10	-				-			
10 – 19	0.4 (-5.7 - 6.6)	0.883			0.8 (-9.7 - 11.3)	0.883		
≥20	2.4 (-3.9 - 8.6)	0.456			-1.3 (-12.5 - 10.0)	0.823		
Service time at current facility								
<10	-				-			
10 – 14	2.0 (-4.3 - 8.3)	0.535			8.7 (-2.7 - 20.0)	0.132		
≥15	7.3 (0.2 - 14.4)	0.044			4.6 (-8.3 - 17.5)	0.477		
Examined survivor and completed J88 in last 3 months								
No	-				-			
Yes	0.3 (-4.7 - 5.2)	0.915			-8.2 (-16.7 - 0.4)	0.061		
Proportion of survivors seen who come to facility								
<20%	-				-			
21% – 40%	0.3 (-6.4 - 7.1)	0.922			8.0 (-3.9 - 19.9)	0.186		
41% - 60%	3.4 (-2.9 - 9.7)	0.291			-8.0 (-19.1 - 3.1)	0.156		
61% - 80%	-4.7 (-12.5 - 3.0)	0.227			-9.9 (-23.0 - 3.2)	0.135		
81% - 100%	-14.9 (-25.8 - -3.9)	0.008			-7.8 (-27.3 - 11.6)	0.426		
Country trained undergraduate								
SA	-				-			
Elsewhere	5.5 (-1.7 - 12.7)	0.134			7.3 (-4.8 - 19.3)	0.236		

	Change in Knowledge (N=93)[a]				Change in Confidence (N=95)[b]			
	Coefficient (95% CI)	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**	**Coefficient (95% CI)**	**p value**
Trained on counselling								
No	-				-			
Yes	-1.8 (-7.9 - 4.4)	0.571			-3.5 (-14.1 - 7.2)	0.519		
Trained on rape care								
No	-				-			
Yes	-1.4 (-6.7 - 3.8)	0.594			-4.8 (-13.9 - 4.2)	0.292		
Baseline knowledge and confidence								
High knowledge and confidence	-		-		-		-	
Low knowledge and high confidence	3.3 (-4.7 - 11.3)	0.413	4.3 (-3.5 - 12.2)	0.275	-1.7 (-12.5 - 9.1)	0.757	0.5 (-10.5 - 11.4)	0.933
High knowledge and low confidence	-7.9 (-17.9 - 2.1)	0.121	-9.6 (-19.3 - 0.2)	0.054	28.2 (14.7 - 41.8)	0.000	29.7 (16.1 - 43.2)	0.000
Low knowledge and confidence	7.1 (-1.0 - 15.1)	0.086	6.8 (-1.0 - 14.6)	0.088	21.3 (10.4 - 32.3)	0.000	23.5 (12.4 - 34.6)	0.000

[a] R squared 0.1270

[b] R squared 0.3886

4. DISCUSSION

The study found significant improvements in knowledge and confidence levels amongst health professionals who attended the pilot training programme. The professionals were fairly experienced as the majority had been working for more than 10 years and half had examined a survivor in the last three months. We showed that the improvements in knowledge were attained across attendees, irrespective of profession, starting level or provincial location, and that those who had lowest empathy at baseline most benefitted from the course in terms of growth in their knowledge. Confidence improvements were most seen in those with lowest confidence at baseline.

Defining the success of a training programme is challenging. Ideally one would prefer to see improvements in the quality of services provided and improved health outcomes for the survivor, some of which are reported with SANE programs (308, 309, 316). However, these are harder to measure, require long-term follow-up of health professionals and survivors, and can be influenced by other factors. Other training programs on rape care have used various methods for evaluation including scales for rape myths, tests, practical demonstrations with simulated patients and mannequins, reviews of clinical notes, and self-reporting on knowledge, skills and clinical practice (332, 334, 336, 357, 362). Besides some of these studies that have reported on improvements after training, there were no other studies found that presented additional factors that influenced knowledge or confidence in health professionals.

Although levels of knowledge significantly improved after the training, the mean post-training percentage knowledge level was 52%. In contrast, percentage confidence levels were fairly high at baseline (67%) and increased significantly for all content areas. Certain content areas had final percentage knowledge scores of less than 50%. The reason for this could be related to topics that were unfamiliar or poorly covered in other trainings, for example, the law and court processes, mental health care, the treatment of infectious diseases besides HIV, and vicarious trauma. These might have required additional sessions or a different teaching methodology.

In this group of doctors and nurses, percentage knowledge levels increased in health professionals who had a low baseline knowledge and confidence level; and percentage confidence levels significantly increased in those who had low baseline confidence levels, irrespective of their knowledge levels. The programme was thus found to be of benefit to the health professionals who needed it the most regardless of their baseline characteristics. Previous analysis found that having a more suitable attitude to rape was related to higher knowledge at baseline (421) so it was notable that those with the lowest empathy showed the greatest improvement in this post-training assessment. The only factor found to be associated with change in percentage confidence levels was level of facility that the health professionals were working in. When controlling for baseline knowledge and confidence levels, health professionals who worked at regional level facilities had a significantly greater increase in percentage confidence levels compared to professionals who worked in clinics or CHCs. The reason for this is unclear, but it may be related to health professionals knowing that they have other services easily accessible in the facility where they work providing them with greater assurance.

Although not associated with changes in knowledge and confidence levels, levels of rape and IPV were very high in the health professionals. It is evident that these levels are reflective of the prevalence in the general population but whether this influences the management of patients with rape and IPV is not clear (68). A previous study with nurses in the country found that 39% had experienced physical or emotional IPV, but only those who had experience of IPV with family and friends or had previously intervened in a domestic dispute provided better quality of care (69).

The study has several limitations. The response rate was not high and forty health professionals (26.3%) were excluded, as their data collection tools could not be linked. Questionnaires were self-administered to ensure privacy but some health professionals did not provide information on all of the questions resulting in missing data. The effect on the regression analysis of having imputed an average for the four scores where a single data point was missing is uncertain but it is unlikely to have altered, if at all, the results of the regression model as only one value per variable was imputed. However it

would strengthen the robustness of the regression by increasing sample size. We decided not to include all of the multiple choice questions in the knowledge score as the consistently very poor response for some suggested that they may not have been well designed questions. The confidence measures used for the first time in this study are subjective and their repeatability is not known. Finally, the post-training assessment of knowledge and confidence was done immediately after the training, so it is not clear if these changes would be sustained over a longer period of time, but it did ensure that any changes were most likely due to this training and no other intervention.

The study thus found that the training programme developed for the Department of Health improved levels of knowledge and confidence in health professionals and was of value to the professionals who needed it the most. The study included both doctors and nurses in one programme, indicating that this was a feasible and viable option for training in South Africa. The expansion and rollout of this programme at undergraduate and in-service levels is critical.

CHAPTER 7

RESULTS: MEDICO-LEGAL FINDINGS, LEGAL CASE PROGRESSION, AND OUTCOMES IN SOUTH AFRICAN RAPE CASES: RETROSPECTIVE REVIEW[14]

1. INTRODUCTION

In 2008 the United Nations Security Council adopted Resolution 1820 (2008), which declared rape to be a threat to global security - an act recognising that rape violates its victims' human rights and has particularly destructive social consequences. The Council also recognised that rape may cause considerable physical and psychological morbidity. Health systems have a critical role in responses to rape, yet in most countries the health sector response is underdeveloped (423). Post-rape services generally receive few resources, service providers often lack specific training for and confidence in examining victims and interpreting their findings for the courts, and the health needs of victims often remain unmet (424, 425). In most countries rape services need resources and development, and research has a valuable role to play in guiding efforts to appropriately focus post-rape health services.

Expert medical evidence is widely used in rape cases, but its contribution to the progression of cases through the legal system and to legal case outcomes is unclear. A recent review (424) found 35 studies exploring the association, all but two from HIC, and two others have since been published. In just two studies, both from the United States, having a documented genito-anal injury was associated with filing charges (426, 427). Thirteen studies examined the association between the documentation of bodily injuries generally and case outcomes, with only two studies from the United States (214, 231) and

[14] Jewkes R, Christofides N, Vetten L, *et al*. 2009. Medico-Legal Findings, Legal Case Progression, and Outcomes in South African Rape Cases: Retrospective Review. *PLoS Med*., 6: e1000164. doi:10.1371/journal.pmed.1000164.

one from Canada (243) finding an association. Many of the studies were very small and dated, which influenced the analyses performed and power thereof (424).

South Africa has an especially high prevalence of rape (114), and as such, it is a particularly important context in which to conduct research on health sector responses to rape. Although in this country these responses have historically been poor, in the last decade there have been great efforts for improvement with a new national policy on sexual assault care (27) and clinical management guidelines (26). The policy includes offering HIV testing and the provision of PEP for HIV to rape survivors. There have been many different initiatives to train health providers in the provision of post-rape health care and forensic medical examination, which have culminated in the development of a national curriculum (136). There have also been many efforts to improve the environment of rape facilities, including by identifying and furnishing dedicated rape care rooms. A forensic kit for collecting evidence, chiefly for genotyping, has been in use since 2000 and its completion is a standard part of the medical forensic examination (27, 428). The forensic kit enables collection of material that can form part of the evidence presented in court, as in rape cases medical evidence consists of both the observations about the victim at the time of the medical examination (including her or his physical and emotional state and sobriety), observations of injuries on her or his body generally and in the genito-anal region, and results of analysis of specimens taken for DNA. Examination findings are usually presented by the medical examiner (doctor or nurse) in person in a courtroom as an expert witness, whose testimony consists of the description of these observations and their interpretation. The DNA results are presented by an analyst from the Forensic Science Laboratory. The South African legal system is an adversarial system based on Roman Dutch law.

Given the growth of initiatives to strengthen the post-rape health care and the dual role of the health sector in providing care for victims as well as collection of evidence to assist the courts, it is important to understand the contribution of forensic medical evidence and the role of DNA evidence in case outcomes. To our knowledge, these two considerations have not previously been explored in a developing country. This article reports findings

of a study that aimed to describe the processing of rape cases by South African police and courts and the association between medico-legal findings and case progression through the criminal justice system.

2. METHODS

Ethics approval was given by the University of Witwatersrand, Faculty of Health Sciences Ethics Committee.

In terms of South African law from 1959 to 2007, rape was defined as occurring when a man had ‘‘intentional & unlawful vaginal sex with woman without consent,’’ and anal and oral penetration without consent were deemed ‘‘indecent assaults.’’ In December 2007 this definition was changed to include anal and oral penetration and encompassed the rape of men. This article presents a study of legally defined rape, based on a provincially representative sample of cases of rape and attempted rape opened at Gauteng province police stations between 00:00 on 1 January 2003 and 23:59 on 31 December 2003, and which had been closed by the police at the time of data collection in 2006 (78). A total of 11 926 rapes were reported at the 128 police stations in the province that year. A sample was drawn for the study using a two-stage procedure. The first stage drew a random sample of 70 police stations using probability proportional to size, where size was based on the number of rape cases that year. Within each police station all the closed rape cases for the year were identified and a systematic sample of 30 dockets was selected (or all cases were taken if the number was less than 30). Dockets selected that were not available were not replaced. The proportion of dockets opened from which we were about to draw the sample was 70.1%. We were not able to ascertain how many dockets were unavailable because they were still open and how many were missing for other reasons. This procedure provided a sample of 2 068 cases for the study. If cases went to court, we obtained court records from both High Courts in the province, as well as all 30 magistrates’ courts.

The police dockets included the witness statements, police investigation diary, the form

on which the findings of the medical examination were documented by the medical examiner, and any other reports, including any from the Forensic Science Laboratory (if available). Data were abstracted by a team of trained fieldworkers using a standardised data-coding sheet. Information gathered included the details of the complainant (age, race, occupation, in the case of children the carer), the circumstances of the rape (when it occurred, where, what the victim was doing, use of weapons, victim responses after the rape), information on the suspect (age and relationship to victim), and on the case outcome. Medico-legal forms found in dockets were copied verbatim onto a blank form in the data capture sheet by the fieldworker, whereas those found in court records were photocopied. The information from these was abstracted onto a form for data entry by health professionals on the study team.

Permission to review closed rape dockets was obtained from the police nationally, provincially, and at the stations. Court documents are a matter of public record. No identifying information related to rape victims was collected during fieldwork and any found on documents that were photocopied was erased.

2.1. DATA ANALYSIS

The analysis was undertaken using Stata 10 and the svy commands used to take into account the structure of the sample. All cases without a medico-legal form, including those for attempted or suspected rape, were excluded from the analysis. Among these, no medical examination was done in 250 cases (50%), in three cases the form had been destroyed with court records, and in a further 252 the reason for nonavailability was unknown. Sixteen cases were dropped because very basic information was unavailable. The remaining 1 547 cases were analysed (85% of those that may have had medical examinations). The analysis is presented according to the age group of the victim (0–17 y and ≥18 y), because the variables operated differently in different age groups. We examined the findings for the 0 - 11-y-old and 12 - 17-y-old age groups separately, but combined them because no additional information was gained by their separation.

For Table 23, we calculated the number and proportion of the cases opened by the police where the perpetrator was arrested (or asked to appear in court), charged, brought to trial, found guilty of a sexual offence (rape, attempted rape, or indecent assault), and imprisoned. We calculated the proportion of the cases that had a forensic evidence kit completed, sent to laboratory, where the suspect's blood was drawn, and where a report on DNA was available from the Forensic Science Laboratory. We also calculated the proportion attaining the previous stage in this process that progressed to the next stage (attrition by stage). We compared the proportion of cases reaching each stage between adults and children using a Pearson Chi-squared test.

For Tables 24 and 25, we calculated the column percentage or mean for variables according to whether the suspect was arrested or not, brought to trial, and convicted of a sexual offence. The variables presented in these tables are those potential confounding variables for the relationship between the medical evidence variables and the outcomes. The survey regression command was used to compare the ages of victim and perpetrator between the two subgroups. A Pearson Chi-squared test was used to compare the proportion of cases at each level of the variable between the two subgroups for categorical variables.

Potential confounders included those related to the circumstances of the rape and possibility of apprehending the rapist: the involvement of more than one perpetrator, the suspect having previous convictions, the suspect's age, and the victim–perpetrator relationship. Some variables that may have influenced the violence of the rape as well as those that might have been in keeping stereotypical myths about what constitutes a ''real rape'' were examined: whether the victim resisted physically or verbally, weapons, and abduction, and whether the case was reported within 72 h was included as it could influence detection of injury and the presence of DNA. As an indicator of the quality of the investigation we included whether the first report statement was taken by the police or not. This statement is taken from the first person that the victim told about the rape and is often used as corroboration of aspects of the account of events and the victim's emotional and physical state at the time.

Non-genital (or anal) injuries included incised wounds, lacerations, grazes, bruises, and areas of tenderness and observations are intended to include the whole body except the ano-genital region. Ano-genital injuries were defined as those that may have been found on the mons pubis, frenulum, clitoris, labia majora, labia minora, perineum, fossa navicularis, hymen, vagina, clitoris, or anus. The injuries recorded ranged from lacerations to bruising, redness, inflammation, or tenderness. The variable ‘‘injury to the genitals with a skin break’’ only included genital injury that took the form of an incised wound, scratch, abrasion or laceration, if bleeding was seen, or if there was scarring that was believed to be from injuries caused by the rape. This variable was examined as an indicator of somewhat greater severity of injury. A four-level injury variable was derived with the referent group being no injury, and comparison groups being non-genital injury only, genital injury with a skin break only, both non-genital and genital injuries with a skin break.

Six logistic regression models were built using the Stata 10 svylogit command to describe factors associated with there being an arrest, having the trial commence (among those arrested or asked to appear in court), and being found guilty of a sexual offence (among those going to trial). Models for adults and children are presented separately. For each model the variables in Tables 24 and 25 were considered and those associated with the outcome at $p<0.1$ were entered into the model with the victim’s age and the four-level exposure variable for injury. For the models for conviction, the presence of a DNA report was included; this was not included for the earlier models as DNA analysis is often only completed on a prosecutor’s request because a case is about to go to trial. Stepwise backwards elimination was used to reach the parsimonious model from the variables tested. The associations between the outcome and the injury (and DNA) variables are presented for each model, adjusted for age and in the trial models, having a first report statement taken, which significantly associated with the outcome ($p\leq0.05$). No other tested variables were significantly associated in these models; these are presented in Table 26.

3. RESULTS

Table 23 shows the proportion of cases of rape reported to the police and reaching each stage of the criminal justice system process for adults and children. Although an arrest was made in almost half of cases, there was only a conviction for a sexual offence in 3% of adult and 7.4% of children's cases. Examining attrition by stage we see that a trial was commenced in only 27% of adult and 38% of child cases where the suspect was arrested and charged in court. Convictions for sexual offences were achieved in a similar proportion of adult and child cases (30% and 41%) commencing trial.

A forensic evidence kit was completed much more often in adults than children (91% versus 63%). Whereas children were much more likely than adults to present more than 72 h after the rape (17.8% versus 3.4%), kits were still not completed on 23.8% of children and 6.3% of adults presenting within 72 h. Completed kits were often not sent to the laboratory for analysis and, in 71.5% of cases that were prosecuted, the suspect's blood was never drawn. Even when blood was drawn, reports on DNA found were rarely available for the courts.

Some of the features of the adult cases are presented in Table 24 and of child cases in Table 25, by whether the suspect was arrested, brought to trial, and convicted. Arrest was more common when older children were raped and there was a suggestion that convictions were more common when adult victims were older ($p=0.07$). Otherwise a victim's age was not associated with case outcomes.

Arrest was less likely in rapes of adults involving multiple perpetrators ($p=0.0003$), but otherwise there was no significant difference in this by outcome. The suspect's age was not associated with case outcome. In adult cases, there is some evidence that trials may have been more likely to start if there were previous convictions ($p = 0.08$), but conviction for a sexual offence occurred less frequently in this group ($p=0.05$). Arrests in both adult and child cases were much more common if the accused was known to the victim ($p<0.0001$).

Table 23. Attrition of rape cases in the criminal justice system and attrition in handling and processing of forensic evidence.

Attrition	Adults		Children		p value
	n	%	n	%	
Overall attrition of cases					
Opening a case	951	100	596	100	-
Suspect arrested or asked to appear in court	430	45.2	341	57.2	0.0001
Charged in court	365	38.4	284	47.7	0.0015
Trial commenced	101	10.6	108	18.1	0.0006
Found guilty of sexual offences	31	3.3	44	7.4	0.0001
Sentenced to imprisonment	30	3.2	24	4.0	0.36
Attrition in handling and processing forensic evidence					
J88 completed and available	951	100	596	100	-
Forensic kit completed	868	91.3	377	63.3	0.0000
Forensic kits sent to lab	659	69.3	273	45.8	0.0000
Suspect's blood obtained	84	8.9	54	9.3	0.81
Report from forensic lab on DNA	10	1.1	12	2.0	0.28

There was no association between whether the victim resisted the rape or abduction and any of the outcomes, for adults or children. Abducted adult and child victims were less likely to see the suspect arrested, but if there was an arrest, the trial was more likely to commence in adult cases. Armed perpetrators were less likely to be arrested. In cases where there was both an arrest and a trial, a statement from the first witness was much more likely to be in the docket.

Injuries in adults and children did not appear to have any influence over arrests. A notable finding was the high proportion (approximately 40%) of cases where an arrest was effected in rape cases of adults and children where no injuries were described. In children, non-genital injuries were uncommon. In child cases, genital injuries were more often found in cases that were brought to trial. In adults, they were more prevalent in cases where there was a conviction. A DNA report was only available for ten adults and 12 children. There was a conviction in three adult cases and two child cases that had a DNA report. The DNA report more often it led to an acquittal when in five adult and five child cases the short tandem repeat (STR) profile did not match that of the suspect. A match did not assure conviction, the accused having been acquitted in three children's cases and one adult case where the profile did match.

Table 24. Characteristics of the rapes of adult women by case outcome

Characteristics	Arrested		Not arrested (N=521)		p value	Trial commenced (N=101)		No trial (N=329)		p value	Guilty of a sexual offence (N=31)		Not guilty (N=70)		p value
	n/N	%	n/N	%		n/N	%	n/N	%		n/N	%	n/N	%	
Mean age of victim	430	27.8	251	27.8	0.95	101	29.3	329	27.4	0.13	31	32.1	70	28.1	0.07
Mean age of (first) perpetrator	409	29.7	-	-[a]	-	101	30.0	308	15.9	0.71	31	30.2	70	29.9	0.86
Proportion with >1 perpetrator	66/429	15.4	130/508	25.6	0.0003	14/101	13.9	52/328	8.2	0.60	6/31	19.4	8/70	11.4	0.24
Perpetrator previously convicted	86/409	21.0	-	-[a]	-	27/100	27.0	59/309	19.1	0.08	5/31	16.1	22/69	31.9	0.05
Victim/perpetrator relationship	-	-	-	-	0.000	-	-	-	-	0.28	-	-	-	-	0.68
Relatives	25	6.0	7	1.4	-	3	3.1	22	6.8	-	2	6.5	1	1.5	-
Current of ex-partners	119	28.4	56	10.9	-	22	22.7	97	30.1	-	4	12.9	18	27.3	-
Strangers/known by sight	116	27.7	332	64.7	-	31	32.0	85	26.4	-	14	45.2	17	25.8	-
Friend/acquaintance	159	37.9	118	23.0	-	41	42.3	118	36.6	-	11	35.5	30	45.5	-
Resisted to rape physically or verbally	172/396	40.2	257/555	42.8	0.39	48/173	47.5	53/257	38.0	0.11	18/31	58.1	30/70	42.9	0.15
Victim kidnapped	199/427	46.6	295/518	56.9	0.003	56/199	56.6	143/328	43.6	0.01	17/31	54.8	39/68	57.4	0.81
Perpetrator armed	153/427	35.8	262/518	50.6	0.000	40/98	40.8	113/329	34.3	0.26	15/31	48.4	25/67	37.3	0.31
Case reported in 72 hours	06/426	95.3	507/519	97.7	0.03	95/100	95.0	311/326	95.4	0.85	30/31	96.8	65/69	94.2	0.59
First report statement taken	265/428	61.9	185/520	35.6	0.000	76/100	76.0	189/328	57.6	0.002	23/31	74.2	53/69	76.8	0.79
Injury: none	161/428	37.7	210/519	40.5	0.84	22/100	33.0	128/327	39.2	0.59	3/30	10.0	30/70	42.9	0.01
Non-genital injury	100/427	23.4	113/519	21.8	-	27/100	27.0	73/327	22.3	-	10/30	33.3	17/70	24.3	-
Injury to genitals with a skin tear	98/427	23.0	113/519	21.8	-	25/100	25.0	73/327	22.3	-	9/30	30.0	16/70	22.9	-
Non-genital & genital injury	68/427	15.9	83/519	16.0	-	15/100	15.0	53/327	16.2	-	8/30	26.7	7/70	10.0	-
Presence of a DNA report	-	-	-	-	-	5/101	5.0	5/329	1.5	0.06	3/31	9.7	2/70	2.9	0.15

[a] Only available if there was an arrest

Table 25. Characteristics of the rapes of children under 18 years by case outcome

Characteristics	Arrested (N=341)		Not arrested (N=255)		p value	Trial commenced (N=108)		No trial (N=233)		p value	Guilty of a sexual offence (N=44)		Not guilty (N=64)		p value
	n/N	%	n/N	%		n/N	%	n/N	%		n/N	%	n/N	%	
Mean age of victim	341	12.2	255	11.2	0.02	108	12.2	233	12.2	0.85	44	12.2	74	12.3	0.97
Mean age of (first) perpetrator	327	27.9	-	-[a]	-	106	28.6	221	27.6	0.49	42	27.4	64	29.4	0.50
Proportion with >1 perpetrator	46/338	13.6	32/237	13.5	0.97	13/107	12.1	53/231	14.3	0.65	8/44	18.1	5/70	7.9	0.08
Perpetrator previously convicted	55/332	16.6	-	-[a]	-	17/107	15.9	38/225	16.9	0.83	6/43	14.0	11/64	17.2	0.67
Victim/perpetrator relationship	-	-	-	-	0.000	-	-	-	-	0.62	-	-	-	-	0.19
Relatives	82	24.6	30	13.5	-	26	24.3	56	24.8	-	13	29.5	13	20.6	-
Current of ex-partners	23	6.9	9	4.0	-	10	9.3	13	5.8	-	6	13.6	4	6.3	-
Strangers/known by sight	40	12	92	41.2	-	10	9.3	30	13.3	-	4	9.1	6	9.5	-
Friend/acquaintance	188	56.5	92	41.3	-	61	57.0	127	56.2	-	21	47.7	40	63.5	-
Resisted to rape physically or verbally	104/172	30.5	237/424	26.7	0.29	40/104	37.0	68/237	27.5	0.16	20/44	45.5	20/64	31.3	0.12
Victim kidnapped	100/339	29.5	108/242	44.6	0.001	32/107	29.9	68/232	29.3	0.92	10/44	22.7	22/64	34.9	0.23
Perpetrator armed	58/339	17.1	62/239	25.9	0.005	17/107	15.9	41/232	17.7	0.64	4/44	9.1	13/63	20.6	0.12
Case reported in 72 hours	249/316	78.8	205/236	86.9	0.008	78/99	78.8	171/217	78.8	0.99	33/41	80.5	45/58	77.6	0.70
First report statement taken	247/336	73.5	160/250	64.0	0.008	90/105	85.7	157/231	68.0	0.001	33/42	78.6	57/63	90.5	0.06
Injury: none	134/341	39.3	106/254	41.7	0.48	33/108	30.1	101/233	43.3	0.004	11/44	25.0	22/64	34.4	0.36
Non-genital injury	15/341	4.3	11/254	4.3	-	2/109	1.9	13/233	5.6	-	0/44	-	2/64	3.2	-
Injury to genitals with a skin tear	174/341	51	117/254	46.1	-	61/108	56.5	113/233	48.5	-	28/44	63.6	33/64	51.6	-
Non-genital & genital injury	18/341	5.3	20/254	7.9	-	12/108	11.1	6/233	2.6	-	5/44	11.4	7/64	10.9	-
Presence of a DNA report	-	-	-	-	-	5/108	4.6	7/233	3.0	0.44	2/44	4.5	3/64	4.7	0.97

[a] Only available if there was an arrest

There was no statistically significant association between the presence of injuries and whether the suspect was arrested in adult or child cases (models not shown). Table 26 shows the four multiple variable models for factors associated with going to trial and convictions for a sexual offence in adult and child cases. After an arrest, a trial was significantly more likely to commence in children with both non-genital and genital injuries causing a skin break and there was some evidence that documented genital injuries alone also increased the likelihood of a case going to trial. In children, convictions for sexual offences were not more common in cases where there was evidence of injury. In adults, on the other hand, finding injuries was not associated with case progression to trial. However, having non-genital or genital injury, and having both, were all strongly associated with a conviction. The presence of a DNA report was not associated with conviction in either age group.

Table 26. Logistic regression models showing associations between whether a trial started and the accused was found guilty and medico-legal findings

Victim	Trial commenced			Accused found guilty of a sexual offence		
Adults	**Model 1**			**Model 3**		
	OR	**95% CI**	**p value**	**OR**	**95% CI**	**p value**
Injury: None	1.00	-	-	1.00	-	-
Non-genital injury	1.34	0.75 – 2.43	0.31	6.25	1.14 – 34.3	0.036
Injury to genitals with a skin tear	1.31	0.72 – 2.35	0.37	7.00	1.44 – 33.9	0.017
Non-genital & genital injury	1.06	0.51 – 2.23	0.87	12.34	2.87 – 53.0	0.001
Presence of a DNA report	-	-	-	4.27	0.27 – 66.4	0.29
Children	**Model 2**			**Model 4**		
	OR	**95% CI**	**p value**	**OR**	**95% CI**	**p value**
Injury: None	1.00	-	-	1.00	-	-
Non-genital injury	0.66	0.13 – 3.24	0.60	-	-	-
Injury to genitals with a skin tear	1.71	0.92 – 3.19	0.09	1.70	0.82 – 3.55	0.15
Non-genital & genital injury	5.83	1.87 – 18.13	0.003	1.51	0.30 – 7.74	0.61
Presence of a DNA report	-	-	-	0.94	0.10 – 8.40	0.95

4. DISCUSSION

We examined a subset of rape cases where there was a forensic medical examination of the victim and have shown a precipitous decline in the proportion of cases reaching each sequential stage in the criminal justice system, with suspects only being convicted in about one in 20 of the documented rape cases. We described a parallel decline in the proportion of cases in which the chain of activities were performed to enable specimens to be collected and sent to a laboratory so that a report on the presence and analysis of DNA would be potentially available for use in trials. Substantial flaws in the system were evident, with forensic

evidence collection kits not always being completed, when indicated; those completed often not being sent to the laboratory for analysis; and the suspect's blood infrequently being drawn. As a result of this, DNA reports were almost never available to be used in court cases. Although DNA is often presented as a key to solving cases and convicting offenders, we have shown that when available, DNA more certainly led the courts to acquit (429), usually because no match to the accused was established, although medical evidence of injuries may have been available. This is not a positive outcome for a rape complainant, but in a criminal justice system that determines cases on absence of reasonable doubt, it would establish ''reasonable doubt'' that the accused was the culprit and thus assist the court.

We have shown that the presence of ano-genital injuries was associated with children's cases going to trial, and in adult cases a conviction was very much more likely if injuries were documented. It is notable that in a quarter of child cases where there was a conviction there were no documented injuries, which was also the case in 10% of adult cases. These data confirm that the presence of injury is not essential for a conviction in rape cases in South Africa, but at the same time it seems to suggest that courts may like to use the presence of injuries, at least in adult cases, as corroboration of the victim's testimony.

The attrition of cases in the criminal justice system is similar to that found in previous research (430), and our findings about the nonavailability of DNA confirms those of an earlier small case series (431). In South Africa, considerable resources have been invested in establishing a system that potentially enables the use of DNA in rape cases, yet it has clearly not been operating properly. It seems that the police are not able to respond appropriately in sending kits to laboratories and ensuring blood is taken from suspects. The police not sending kits to the laboratory was not explained by failure to make an arrest or the police withdrawing the case, but depended primarily on which police station or district the case was opened in. In most cases where suspect's blood was sent to the laboratory the kits were still not analysed. In 2005 the South African Forensic Science Laboratories had backlogs of about 20 000 unanalysed kits (51), a number proportionately somewhat similar to that reported in the United States, but they were much slower at completing analysis than the average time in the United States (432). As a result, few kits sent to them are processed, and only children's kits are analysed routinely, rather than on a request from a prosecutor.

This study has shown that in this setting medical documentation of injury and expert

testimony in court may have influenced case progression and outcomes. In some individual cases DNA may be of value, but when the system is viewed as a whole this is not evident. It seems likely that this is chiefly because health and police systems in South Africa simply do not work well enough to enable DNA and forensic evidence collection and analysis to realise its potential. Although we know that in some countries even where DNA and forensic evidence systems work more effectively, they are still not associated with a positive legal outcome (243), as DNA is of no value if the basis of the defence is consent. Nonetheless we believe that as a middle-income country South African forensic laboratories are affordable and a high proportion of South African rape cases are not intimate partner rapes, therefore DNA has the potential to contribute. On the basis of current information, efforts should be made to improve the system and the proportion of cases in which DNA is available rather than dispensing with it entirely.

This study is, to our knowledge, the first from a developing country to examine the association between findings on medico-legal examination and rape case progression and outcomes. Its strengths are its size and the fact that it is based on a random sample of cases from a broad geographic region. There may be limitations to the generalisability of the findings since we only had access to closed cases and are not sure what proportion of eligible dockets were available for the sample or what biases could have ensued from this. The study relied on routine data, which are often flawed. We enhanced the validity of case outcomes data by using data from courts as well as the dockets. We are aware that the quality of documentation of the dockets and medical findings was very variable, but since this is what is used in the criminal justice system it is still valid to see how it may be associated with the progression of cases. In the analysis here we have only adjusted for a small set of potential confounding factors. We recognise that there could have been other factors influencing whether cases go to trial and convictions, notably how witnesses come across in court, willingness to accept children's testimony in court, and bias from judges. Further research with large datasets is needed to explore these areas in more detail.

5. CONCLUSION

This is the first study, to our knowledge, to show an association between documentation of ano-genital injuries, trials commencing, and convictions in rape cases in a developing country. Its findings are of particular importance because they point to the value of good

basic, forensic medical practices in assisting courts in rape cases. Health care providers need to be trained to provide high quality health care responses after rape, and we have shown that the core elements of the medico-legal response require very little technology. As such they should be replicable in LMIC settings, providing forensic medical examiners are trained in examination and documentation of injuries, and the presentation and interpretation of findings in court. Our findings raise important questions about the value of evidence that requires the use of forensic laboratories at a population level in countries like South Africa that have substantial inefficiencies in their police services. They suggest that in a resource constrained setting far more benefit may be accrued to rape victims and the criminal justice system by establishing policy, guidelines, and training for forensic medical examiners (be they nurses or doctors) and ensuring that they are equipped to provide good basic health care, including the forensic medical examination, than by focusing on complex and expensive systems to allow for DNA analysis. Further research is needed to deepen understandings of the use of medical evidence in court in a range of settings, and more health systems research is needed in both developed and developing countries to evaluate health systems interventions in post-rape care and their impact on victim/survivor health outcomes as well as the processes of justice.

CHAPTER 8

RESULTS: GENITO-ANAL INJURY PATTERNS AND ASSOCIATED FACTORS IN RAPE SURVIVORS IN AN URBAN PROVINCE OF SOUTH AFRICA: A CROSS-SECTIONAL STUDY[15]

1. BACKGROUND

Transcripts of expert witness testimonies in court cases for rape show that the presence or absence of injuries and its interpretation is usually a subject of immense focus in cross-examination (433). Health care providers, as experts, are required to use evidence related to injuries to interpret their findings when cross-examined in court (86, 434) and must demonstrate that their testimony is based on theories that are preferably evidence-based and accepted by others in the field. In paediatric cases, a classification of injuries has been developed (435) but in adults, the interpretation of evidence is much more complex. This allows for health care providers to be challenged in court especially in cases where no injuries have been found as some literature have reported on the presence of injuries after consensual intercourse as well (172, 174–177). Higher rates of prosecution and conviction have been found in cases with injuries documented (87, 214).

Globally, the reported prevalence of genito-anal injuries after rape is between 9% and 87% depending on the ages of the survivors in the sample, method of examination and the type of injuries included (174–176, 180, 193, 201, 204–208, 211, 227, 229, 230, 234, 237, 241, 248, 424) while in South Africa genito-anal injuries have been reported in 7% to 58% of rape cases (78, 203, 232, 238, 240) and in 19% to 56% of rape homicides (121, 250). As not all women who report rape have injuries, understanding what factors are associated with injury patterns and what may influence these is potentially very valuable. Although there is some data available on the prevalence of genito-anal injuries after rape there has been much less analysis on the factors associated with these injuries. Studies have reported that age, race, educational level, postmenopausal state, previous sexual experience, previous experience with violence, parity, contraceptive use, alcohol usage prior to the rape, relationship with the

[15] Jina R, Jewkes R, Vetten L, *et al*. 2015. Genito-anal injury patterns and associated factors in rape survivors in an urban province of South Africa: a cross-sectional study. *BMC Womens Health*, 15(1):29.

perpetrator, location of the assault, reported anal penetration, threats of violence and type of resistance during the rape, the presence of non-genital injuries, time to examination, and levels of experience of examiners are significantly associated with the presence of genito-anal injuries in multivariable analysis, but these associations have not been consistent across studies (199, 204–206, 209–213, 215, 216, 221–224, 226–229, 233, 236, 245, 247, 251, 253, 436).

None of the above-mentioned studies have been done in South Africa and as this country has a very high rate of rape homicide (121), there is reason to suspect that rape in South Africa may be more violent and different in some respects from rape elsewhere in the world. Given the dearth of literature in this area, there is a need to increase the pool of international evidence and more so that linked to the local context. The aim of this paper is to describe the prevalence of genito-anal injuries by site and identifies factors associated with the absence of genito-anal injuries in rape survivors in Gauteng, South Africa.

2. METHODS

A cross-sectional study was conducted that randomly sampled rape cases reported to the Gauteng province police in 2003. Police files including the medico-legal records (J88 form) (40, 437) and court records were reviewed for cases selected that met the common law definition of rape during that period, which was to have "intentional, unlawful sexual intercourse with a woman without her consent" (18).

A two stage sampling procedure was used to select the cases to be reviewed. In the first stage, 70 police stations were sampled out of the 128 that had rape cases reported in 2003, using probability proportional to size. Here the total rape cases reported in the year were used. For the second stage of sampling, 30 cases (or all cases if there were less than 30 cases reported) were randomly selected from all cases that had been identified to be closed at the time of data collection in 2008. There were no replacements of cases if dockets pertaining to selected cases were not found. In total a sample size of 2068 cases was obtained.

Data were obtained from the police dockets on the details of the survivor and her behaviour after the rape, circumstances of the rape, and details of the perpetrator. Closed questions were used for well-defined variables whereas open questions that were post-coded were used

for information on the circumstances of the rape. The J88 forms were copied verbatim or photocopied and coded by three health care providers on the team. Here information was obtained on the examination that was conducted with the findings and conclusions of the health care provider. Fieldworkers were trained for a week prior to data collection and the consistency in data collection was maintained through supervision by two of the researchers and frequent discussions.

The data were analysed using Stata 10.0 with the svy command to adjust for the design of the study. For this study, the sample size was restricted to cases where an examination was conducted and a J88 form completed within 10 days of a rape, with vaginal penetration, being reported. Missing data for individual variables were excluded from the analysis. Eighteen women reported having anal penetration but they had all experienced vaginal penetration as well. Age was categorized into three groups: an under 18 group including children and adolescents, a group from 18 to 44 years, and a group of women 45 years and older to include postmenopausal women. Smaller age categories were used in the analysis for survivors who had no previous sexual intercourse experience to account for varying oestrogen levels at different ages (392).

The pattern of genito-anal injuries were initially described according to the type and location of the injuries as listed on the J88 form with some categories being merged (clitoris and frenulum of clitoris, urethral orifice and paraurethral folds, labia majora and labia minora, posterior fourchette, fossa navicularis, perineum, hymen, vagina and cervix, skin around the orifice, orifice and sphincter/anus). Health care providers are not required to report on their examination methods and techniques used on the J88 form and very few providers would do this on their own accord. According to a Department of Health manager of the service at the time, only one or two specialized facilities in the province were using toluidine blue dye or colposcopies for examination at the time. Vaginal and cervical findings would in the vast majority of facilities be identified with a speculum examination and where this section was not completed, it was assumed that the examination was not done. Anoscopic examinations are very rarely conducted for post-rape examinations and are not recommended with recent training, unless there is an indication for one to be done (136).

Considering the sensitivity and specificity of injuries in relation to rape, a combined variable was generated for genito-anal injuries. This included scratches, abrasions, tears, bruising,

haematomas, and bleeding in the genito-anal area, hymenal clefts or swelling, cuts in the genital area and swelling in the anal area (391). Redness, scars and pain were categorized as being uninjured. The absence of genito-anal injuries was then assessed for a number of subgroups, including those related to the survivor, factors pertaining to the rape, and health service factors. Chi Square and Fischer Exact tests were done to compare proportions by subgroup. A logistic regression model was built with the absence of genito-anal injuries as the outcome variable and the demographic characteristics of the survivors, circumstances of rape and health service factors as explanatory variables. Backward selection was used to build the final model while adjusting for age of survivors and time to examination as these were considered to have a potential confounding effect. A separate model was built for virgins using the same approach. In the analysis a p value of <0.05 was considered to be significant.

This study was approved by the Human Research Ethics Committee of the University of the Witwatersrand (M040331). Permission was also obtained from the SAPS and Department of Justice. All identifiers related to the survivor and service providers were excluded from the data collection.

3. RESULTS

There were 1472 women who had gynaecological examinations and findings reported on the J88 forms of which 371 had an anal examination as well. The majority of the survivors were between the ages of 18 and 44 years (n = 853, 59%) while 37% were less than 18 years of age (n = 532). About a third of the survivors were reported to be virgins at the time of the examination (n = 361, 27%) and there were very few survivors who were recorded to have disabilities (n = 25, 2%) or to have been under the influence of drugs or alcohol (n = 53, 5%). Most of the survivors were examined within 48 hours of the rape (n = 1056, 84%) and 19% (n = 269) reported being raped by multiple perpetrators.

Genital injuries ranged from 1% (n = 20) for cuts to 36% (n = 535) for scratches, abrasions or tears (Table 27). Most injuries were recorded on the hymen (n = 666, 45.2%) followed by the posterior fourchette (n = 451, 30.6%), labias combined (n = 235, 16.0%) and fossa navicularis (n = 217, 14.7%). Redness was the most common injury recorded for the clitoris and its frenulum, urethral orifice and paraurethral folds, and the labia majora and minora

while scratches, abrasions or tears were the most common injuries recorded for the posterior fourchette, fossa navicularis and perineum. The skin around the orifice had the most number of injuries recorded on the anal examination (n = 38, 10.2%) with scratches, abrasions or tears being the most common injury recorded on anal examination (Table 28). Overall, 723 (49.1%) survivors were found to have genito-anal injuries.

On bivariate analysis (Table 29), age was found to be significantly associated with the absence of injuries. Among survivors without injuries, 30% were less than 18 years of age, whereas 44% of those with injuries were aged under 18 years. Other factors found to be significantly associated with the absence of injuries included survivors who had had a previous pregnancy (60% of those with no injuries had been pregnant versus 51% of those with injuries) and those who were raped by a perpetrator that was armed (39% of those with no injuries versus 34% of those injured). Furthermore, the percentage of virgins among those with injuries was significantly greater than that among those with no injuries 228 (36% versus 20%). Similarly rape by multiple perpetrators (21% versus 16%) and being examined by a doctor with no additional graduate qualifications (16% versus 9%) was more common amongst those with injuries.

In the multivariable model of factors associated with the absence of injuries (Table 30) being a virgin (OR 0.4, 95% CI 0.3 – 0.7), being raped by multiple perpetrators (OR 0.6, 95% CI 0.6 – 0.9) and being examined by a doctor with postgraduate qualifications (OR 0.6, 95% CI 0.4 – 0.9) were found to be significant. These factors were associated with a lower odds of having no injuries, in other words a greater likelihood of injury. Survivors who were examined 2 days or later after the rape were significantly more likely to have no genito-anal injuries recorded (OR 1.5, 95% CI 1.0 – 2.3). In the model for survivors who were virgins (Table 31), those with disabilities were found to have a greater odds of having no genito-anal injuries recorded (OR 4.9, 95% CI 1.2 – 20.1) while those between the ages of 8 and 17 years had a lower odds of having no genito-anal injuries (i.e. were more likely to be injured) compared to survivors less than 4 years of age.

Table 27. Genital injuries by location

Gynaecological examination[#]	Total (N=1472)[*]	Clitoris and frenulum (N = 80)[#]	Urethral orifice & paraurethral folds (N = 139)[#]	Labias majora and minora (N=235)[#]	Posterior fourchette (N=451)[#]	Fossa navicularis (N = 217)[#]	Perineum (N = 79)[#]	Hymen (N=666)[#]	Vagina (N = 188)[#]	Cervix (N = 70)[#]
Scratches/abrasions/tears	535 (36.3%)	35 (43.8%)	65 (46.8%)	126 (53.6%)	364 (80.7%)	130 (59.9%)	62 (78.5%)	237 (35.6%)	97 (51.6%)	19 (27.1%)
Cuts	20 (1.4%)	1 (1.3%)	5 (3.6%)	8 (3.4%)	10 (2.2%)	5 (2.3%)	5 (6.3%)	1 (0.2%)	1 (0.5%)	0 (0.0%)
Bruising/haematoma	254 (17.3%)	32 (40.0%)	48 (34.5%)	75 (31.9%)	140 (31.0%)	100 (22.2%)	38 (48.1%)	119 (17.9%)	47 (25.0%)	15 (21.4%)
Bleeding	145 (9.9%)	14 (17.5%)	22 (15.8%)	29 (12.3%)	57 (12.6%)	15 (6.9%)	14 (17.7%)	58 (8.7%)	79 (42.0%)	52 (74.3%)
Hymenal clefts								63 (9.5%)		
Hymen swollen								138 (20.7%)		
Scars from ?assault	78 (5.3%)	4 (5.0%)	11 (7.9%)	17 (7.2%)	66 (14.6%)	11 (5.1%)	5 (6.3%)	12 (1.8%)	1 (0.5%)	0 (0.0%)
Redness/inflammation	238 (16.2%)	62 (77.5%)	107 (77.0%)	139 (59.2%)	106 (23.5%)	86 (39.6%)	36 (45.6%)	24 (3.6%)	19 (10.1%)	10 (14.3%)
Tenderness/pain	76 (5.2%)	7 (8.9%)	6 (4.3%)	16 (6.8%)	16 (3.5%)	12 (5.5%)	6 (7.6%)	36 (5.4%)	51 (27.1%)	4 (5.7%)

[*] Total sample size includes all patients who underwent a gynaecological examination.

[#] Total number of patients who had injuries recorded at a specific site, for which type of injuries are presented in the rows. Patients could have injuries at more than one site, and could have more than one type of injury per site. Each cell in the table represents the proportion of patients who had injuries reported of a specific type at a specific site.

Table 28. Anal injuries by location

Anal examination[#]	Total (N = 371)[*]	Skin around orifice (N = 38)	Orifice (N = 29)	Sphincter/ Anus (N = 16)
Scratches/abrasions/tears	30 (8.1%)	23 (60.5%)	21 (72.4%)	9 (56.3%)
Bruising	10 (2.7%)	10 (26.3%)	4 (13.8%)	3 (18.8%)
Bleeding	2 (0.5%)	1 (2.6%)	2 (6.9%)	0 (0.0%)
Swelling/tyre sign[$]	13 (3.5%)	13 (34.2%)	11 (35.5%)	3 (18.8%)
Scars from ?assault/funnelling[^]	7 (1.9%)	5 (13.2%)	6 (20.7%)	3 (18.8%)
Redness/inflammation	16 (4.3%)	16 (42.1%)	11 (37.9%)	7 (43.8%)
Tenderness/pain	3 (0.8%)	2 (5.3%)	2 (6.9%)	2 (12.5%)

[*] Total sample size includes all patients who underwent an anal examination.

[#] Total number of patients who had injuries recorded at a specific site, for which type of injuries are presented in the rows. Patients could have injuries at more than one site, and could have more than one type of injury per site. Each cell in the table represents the proportion of patients who had injuries reported of a specific type at a specific site.

[$] Perianal swelling in the form of a ring.

[^] Relaxation of the external anal sphincter but not of the internal anal sphincter which results in a funnel-like appearance of the anus on physical examination. Appears with repeated abuse.

Table 29. Absence of genito-anal injuries by factors related to the patient, rape and examination

	Total	Absence of genito-anal injuries (N = 749)	Presence of genito-anal injuries (N = 723)	p value
PATIENT INFORMATION				
Age (N = 1447)				
<18 years	532 (36.8%)	221 (30.0%)	311 (43.9%)	0.000
18 - 44 years	853 (59.0%)	489 (66.3%)	364 (51.3%)	
≥45 years	62 (4.3%)	28 (3.8%)	34 (4.8%)	
Virgin (N = 1311)				
No	950 (72.5%)	526 (80.4%)	424 (64.5%)	0.000
Yes	361 (27.1%)	128 (19.6%)	233 (35.5%)	
Previously pregnant (N = 1131)				
No	502 (44.4%)	243 (40.5%)	259 (48.8%)	0.004
Yes	629 (55.6%)	357 (59.5%)	272 (51.2%)	
Disability (N = 1472)				
No	1447 (98.3%)	734 (98.0%)	713 (98.6%)	0.354
Yes	25 (1.7%)	15 (2.0%)	10 (1.4%)	
Under influence of drugs or alcohol (N = 1114)				
No	1061 (95.2%)	536 (95.4%)	525 (95.1%)	0.835
Yes	53 (4.8%)	26 (4.6%)	27 (4.9%)	
RAPE				
Length of time perpetrator detained victim (N = 1411)				
Less than a day	1204 (85.3%)	620 (86.6%)	584 (84.0%)	0.224
1 day of more	207 (14.7%)	96 (13.4%)	111 (16.0%)	
Multiple perpetrators (N = 1437)				
No	1168 (81.3%)	616 (83.6%)	552 (78.9%)	0.038
Yes	269 (18.7%)	121 (16.4%)	148 (21.1%)	

	Total	Absence of genito-anal injuries (N = 749)	Presence of genito-anal injuries (N = 723)	p value
Perpetrator victim relationship (N = 1414)				
Any relative	99 (7.0%)	46 (6.4%)	53 (7.7%)	0.320
Current or ex-partner	200 (14.1%)	113 (15.6%)	87 (12.6%)	
Stranger or someone known only slightly/by sight	697 (49.3%)	346 (47.9%)	351 (50.8%)	
Some other known person	418 (29.6%)	218 (30.2%)	200 (28.9%)	
Perpetrator armed (N = 1442)				
No	917 (63.6%)	448 (61.1%)	469 (55.2%)	0.039
Yes	525 (36.4%)	285 (38.9%)	240 (33.9%)	
Victim hurt with weapon (N = 517)				
No	399 (77.2%)	226 (79.6%)	173 (74.3%)	0.116
Yes	118 (22.8%)	58 (20.4%)	60 (25.8%)	
Victim threatened (N = 1472)				
No	809 (55.0%)	401 (53.5%)	408 (56.4%)	0.273
Yes	663 (45.0%)	348 (46.5%)	315 (43.6%)	
Physical force used (N = 1429)				
No	557 (39.0%)	273 (37.4%)	284 (40.6%)	0.192
Yes	872 (61.0%)	457 (62.6%)	415 (59.4%)	
Victim resisted (N = 1472)				
No	809 (55.0%)	410 (54.7%)	399 (55.2%)	0.857
Yes	663 (45.0%)	339 (45.3%)	324 (44.8%)	
Number of penetrations (N = 1272)				
1	861 (67.7%)	465 (69.8%)	396 (65.4%)	0.117
>1	411 (32.3%)	201 (30.2%)	210 (34.7%)	
EXAMINATION				
Time from rape to examination (N = 1262)				
<2 days	1056 (83.7%)	528 (83.5%)	528 (83.8%)	0.899
2 - 10 days	206 (16.3%)	104 (16.5%)	102 (16.2%)	

	Total	Absence of genito-anal injuries (N = 749)	Presence of genito-anal injuries (N = 723)	p value
Doctor's qualification (N = 1223)				0.001
Medical degree	1072 (87.7%)	562 (91.5%)	510 (83.7%)	
Higher than medical degree	151 (12.4%)	52 (8.5%)	99 (16.3%)	

Table 30. Multivariable model to test the factors associated with the absence of genito-anal injuries

	Univariate analysis OR (95% CI)	p value	Multivariable analysis (N = 974) OR (95% CI)	p value
PATIENT INFORMATION				
Age (N = 1447)				
<18 years	-			
18 - 44 years	1.9 (1.5 - 2.4)	0.000	1.4 (0.9 - 2.0)	0.157
≥45 years	1.1 (0.6 - 1.9)	0.835	0.5 (0.2 - 1.1)	0.078
Virgin (N = 1311)				
No	-	0.000	-	
Yes	0.4 (0.3 - 0.6)		0.4 (0.3 - 0.7)	0.000
Previously pregnant (N = 1131)				
No	-	0.011		
Yes	1.4 (1.1 - 1.8)			
Disability (N = 1472)				
No	-	0.329		
Yes	1.5 (0.7 - 3.6)			
Under influence of drugs or alcohol (N = 1114)				
No	-	0.945		
Yes	1.0 (0.5 - 1.8)			
RAPE				
Length of time perpetrator detained victim (N = 1411)				
Less than a day	-			
1 day of more	0.8 (0.6 - 1.1)	0.182		
Multiple perpetrators (N = 1437)				
No	-	0.022	-	
Yes	0.7 (0.5 - 1.0)		0.6 (0.4 - 0.9)	0.017

	Univariate analysis OR (95% CI)	p value	Multivariable analysis (N = 974) OR (95% CI)	p value
Perpetrator victim relationship (N = 1414)				
Any relative	-			
Current or ex-partner	1.6 (1.0 - 2.7)	0.062		
Stranger or someone known only slightly/by sight	1.2 (0.8 - 1.9)	0.356		
Some other known person	1.4 (0.9 - 2.2)	0.154		
Perpetrator armed (N = 1442)				
No	-			
Yes	1.3 (1.0 - 1.6)	0.042		
Victim hurt with weapon (N = 517)				
No	-			
Yes	0.7 (0.5 - 1.1)	0.124		
Victim threatened (N = 1472)				
No	-			
Yes	1.2 (0.9 - 1.4)	0.192		
Physical force used (N = 1429)				
No	-			
Yes	1.1 (0.9 - 1.4)	0.435		
Victim resisted (N = 1472)				
No	-			
Yes	1.0 (0.8 - 1.3)	0.898		
Number of penetrations (N = 1272)				
1	-			
>1	0.8 (0.6 - 1.0)	0.035		
EXAMINATION				
Time from rape to examination (N = 1262)				
<2 days	-		-	0.035
2 - 10 days	1.0 (0.7 - 1.4)	0.874	1.5 (1.0 - 2.3)	

	Univariate analysis OR (95% CI)	p value	Multivariable analysis (N = 974) OR (95% CI)	p value
Doctor's qualification (N = 1223)				
Medical degree	-		-	
Higher than medical degree	0.6 (0.4 - 0.9)	0.010	0.6 (0.4 - 0.9)	0.020

Table 31. Multivariable model to test the factors associated with the absence of genito-anal injuries in survivors who were virgins

	Univariate analysis OR (95% CI)	p value	Multivariable analysis (N = 275) OR (95% CI)	p value
PATIENT INFORMATION				
Age (N = 349)				
<4 years	-		-	
4 - 7 years	0.8 (0.3 - 1.8)	0.563	0.5 (0.2 - 1.5)	0.232
8 - 12 years	0.2 (0.1 - 0.6)	0.002	0.2 (0.1 - 0.5)	0.001
13 - 17 years	0.2 (0.1 - 0.6)	0.001	0.2 (0.1 - 0.4)	0.000
18 - 34 years	0.5 (0.2 - 1.6)	0.219	0.3 (0.1 - 1.1)	0.070
35 - 44 years	0.8 (0.0 - 17.4)	0.887	0.7 (0.0 - 15.3)	0.813
Disability (N = 361)				
No	-		-	
Yes	2.8 (0.9 - 8.8)	0.083	4.9 (1.2 - 20.1)	0.028
RAPE				
Length of time perpetrator detained victim (N = 321)				
Less than a day	-			
1 day of more	0.8 (0.4 - 1.6)	0.484		
Multiple perpetrators (N = 342)				
No	-			
Yes	0.8 (0.3 - 1.6)	0.424		
Perpetrator victim relationship (N = 324)				
Any relative	-			
Current or ex-partner	0.3 (0.0 - 1.5)	0.138		
Stranger or someone known only slightly/by sight	0.5 (0.2 - 1.0)	0.048		
Some other known person	0.9 (0.5 - 1.8)	0.769		
Perpetrator armed (N = 339)				
No	-			
Yes	0.5 (0.3 - 1.0)	0.064		

	Univariate analysis OR (95% CI)	p value	Multivariable analysis (N = 275) OR (95% CI)	p value
Victim hurt with weapon (N = 59)				
No	-			
Yes	0.5 (0.1 - 2.4)	0.355		
Victim threatened (N = 361)				
No	-			
Yes	0.7 (0.4 - 1.2)	0.202		
Physical force used (N = 337)				
No	-			
Yes	0.6 (0.4 - 1.0)	0.057		
Victim resisted (N = 361)				
No	-			
Yes	0.7 (0.5 - 1.2)	0.195		
Number of penetrations (N = 274)				
1	-			
>1	0.9 (0.5 - 1.8)	0.774		
EXAMINATION				
Time from rape to examination (N = 281)				
<2 days	-		-	
2 - 10 days	1.4 (0.8 - 2.4)	0.244	1.3 (0.7 - 2.4)	0.348
Doctor's qualification (N = 310)				
Medical degree	-			
Higher than medical degree	1.0 (0.5 - 2.0)	0.944		

4. DISCUSSION

This study adds important data on the prevalence and pattern of genito-anal injuries in the South African context. Of note, just over half of the survivors had no genito-anal injuries, and in these cases there is a possibility that this will be misconstrued by the police and the courts to mean that no rape occurred (252). While this study did potentially include some cases of alleged rapes or false allegations, previous work in South Africa have shown that they make up a small proportion of between 1% and 3% of reported rape cases (78, 438). It is hoped that in rape cases where no injuries are reported, other supporting evidence will enable a conviction in court. Yet, it is noted that although convictions do occur when no injuries are recorded, it is quite low in South African courts, more so for adult survivors (9% conviction in cases with no reported injuries) than in children (33%) (87).

Work in the field has shown that genito-anal injury detection is complex, and providers are limited by the availability of the necessary equipment and resources to conduct examinations and identify injuries. This is a challenge in South Africa as very few facilities had colposcopies at the time of the study and anecdotal evidence from present day indicates that even when colposcopies are available, they are not always used by providers. Similarly, the usage of toluidine blue dye has been erratic with the vast majority of facilities not having the dye available. In addition, the J88 form does not specifically require providers to describe the examination techniques that they used, thus depending on astute providers filling in this information at their own discretion when necessary. In essence, this implies that there is probably significant under detection of injuries with only easily identifiable injuries being reported on and tested in this study, as opposed to all possible injuries.

In survivors with injuries, there was substantial variation in the prevalence of different injuries. Common injuries included scratches, abrasions, tears, bruising and haematomas. Redness was also frequently reported, yet it is a non-specific sign and can undergo much scrutiny in court especially if it is an isolated finding (391). This is harder to defend on cross-examination as a finding indicative of sexual assault as there are a number of other common causes and we thus excluded it in our final analysis. The predominant locations of injuries were as expected (193), with most of the injuries reported on the hymen, posterior fourchette and fossa navicularis. Major issues of concern are the lack of uniformity in examining survivors, dependence on the skill and experience of the examiner and

discrepancies in recording of injuries (177). Defining the significance of injuries also remains a challenge because it is recognised that vigorous consensual sex can also result in injury (175, 176). There has been a call to develop a standardised classification system with an injury severity scale, yet it is clear that this will still not resolve the legal concern of whether rape occurred or not (177, 193). In previous studies, medical doctors and mental health practitioners have self-reported that training improved their clinical practice (334, 336, 362) and this was found in a small study with doctors which evaluated the completion of clinical notes and collection of evidence after training (332). Studies conducted with nurses who underwent training for sexual assault examiner programmes have also reported on improved collection of forensic evidence (309). Furthermore, a previous study in South Africa showed that training alone resulted in increased knowledge and confidence in doctors and nurses (439). Additional training thus appears to play a significant role in improving the quality of services provided to survivors of rape, and it is therefore interesting that this study found that there was a significant association between doctors who had some advanced training and the recording on injuries on the J88 form.

A consistent finding with international literature was that there is a significantly greater odds of finding injuries in survivors who were virgins (222, 223, 229) unlike the number of perpetrators, which was not found to be associated with reported injuries in previous studies conducted in other countries (223, 229). Multiple perpetrator rape is a common phenomenon in South Africa with a self-reported prevalence of 9% to 16% (114, 130). It has been well described in the broader context of sexual coercion and with varying motivations, however punishment has been found to be a driver of the rape in about one in three cases (128, 130). In such cases, an increase in violence is possible.

This study found that children between the ages of 4 and 12 years were more likely to be injured compared to children of less than 4 years of age. This goes against a widespread perception that injuries would be more commonly found in very young children but fits with argument that is made that high levels of oestrogen which are present in girls under 5 can protect against injury in rape, whereas the changes in physiology and oestrogen levels occurring after 5 years of age results in heightened vulnerability (440).

By the same token, although it is reported that people with disabilities are at high risk of being sexually assaulted or abused (441), there were very few survivors with disabilities in

this study. It may however reflect the difficulties these survivors face in verbalising and reporting abuse (442). In survivors who were virgins, those with disabilities were found to have a significantly greater odds of having no injuries recorded. No other studies were found that described in detail injury patterns in rape survivors with disabilities.

Limitations of the study included having absent J88 forms, which occurred in 23% of the main sample of dockets. In addition, only rape cases that were reported to the police were included in the study, and this may reduce the generalisability of and bias findings, as survivors in certain relationships (e.g. rape in marriage) or those lacking injuries may be less likely to report their cases. On the other hand, cases of false allegations and alleged rape may also be included in the study, however it is assumed that the proportion would be small. The study was limited to survivors who were examined within 10 days of the rape as it was assumed that there would be very few significant genito-anal injuries visible beyond this period but this could have differentially excluded some groups of survivors e.g. young children who would be more likely to present outside this time period. Recorded injuries on the J88 form may not be indicative of actual injuries, for example it is unclear why there are a substantial proportion of bruises reported on the vagina, but this does reflect actual practice in the province and the findings that are presented in court. The examination techniques used is not recorded on the J88 forms but only a couple of specialized facilities in Gauteng province had colposcopies or toluidine blue dye available in 2003. Gauteng, however, is fairly urban and thus findings may differ in more rural areas of the country. In identifying factors associated with the absence injuries, explanatory variables were limited to what was recorded and available in the docket and on the J88 form.

5. CONCLUSIONS

This study provides valuable data that health care providers can use during presentation in court as expert witnesses. Almost half of the survivors did not have any injuries recorded on the examination and hypothetically there are a number of factors that could influence the absence of injuries. This study found that being a virgin, multiple perpetration rape and being examined by a doctor with only basic qualifications were significantly associated with the absence of genito-anal injuries. Health providers as expert witnesses in court should thus be aware that in all other respects there was no significant difference in survivors who had injuries and those who did not. It is thus important to continuously reiterate the message that

the presence of injuries does not necessarily prove that rape has occurred, especially taking into consideration the sensitivity and specificity of particular injuries, and similarly the absence of injuries do not disprove the fact (216). The need to increase the utilization of specialized examination techniques through the availability of resources and training is necessary and could aid in the prosecution of rape in South Africa.

CHAPTER 9

DISCUSSION: USING THE EVIDENCE TO IMPROVE POST-RAPE CARE SERVICES

1. INTRODUCTION

The aim of this thesis is to strengthen the evidence base for improving the delivery of post-rape health care services in South Africa as there is a high prevalence in the country with high levels of multiple perpetrator rape, and rape is considered to be quite violent in the country. Furthermore, although efforts have been made to improve post-rape health care services both in South Africa and internationally, gaps are still noted in the literature. In this thesis I have addressed some of these gaps in three broad focus areas: the organisation of services (Chapter 4), the selection and capacitation of providers (Chapter 5 and 6), and the interpretation of medico-legal evidence in term of genito-anal injuries (Chapter 7 and 8).

In this chapter I begin by discussing how the main findings of this thesis contribute to the current evidence on post-rape care services. I then reflect on the implications these findings have in the three broad focus areas for post-rape care services in South Africa. Overall limitations of all the publications are then presented before ending with proposals for future research and a final conclusion on the thesis.

2. CONTRIBUTION OF THESIS FINDINGS ON CURRENT EVIDENCE OF POST-RAPE CARE

As reported in Chapter 2, rape is a global problem with high prevalence rates in specific geographical areas and countries, including South Africa. Survivors of rape require assistance and support from multiple sectors, of which health, police and justice play the biggest role. This requires an organised effort by the said sectors to offer a supportive and collaborative delivery of service. Ultimately improved post-rape care services should lead to better medical and legal outcomes. Based on the conceptual framework and the South African context, three areas that were recognised to have gaps in evidence and that were

considered to be significant in the delivery of health care were selected as focus areas. South Africa has a policy and guideline in place (26, 27), and although currently under review, it provides a good framework for the delivery of care. Yet, it was noted, that although some guiding principles in the policy address the organisation of services, there is a lack of evidence to substantiate all of the aspects in these principles, and therefore this was identified as the first focus area for the thesis. Following this, the role of health care providers is pivotal as they are the "face of the service" to survivors, and there was a lack of information on whether the correct providers are selected to deliver the service, what their capacity is and whether efforts that were made to improve this actually are successful. The final area focused on the lack of evidence related to the prevalence, patterns and factors associated with genito-anal injuries after rape, as this information can assist providers in the interpretation of their findings for legal purposes. Despite concentrating on the South Africa context, the findings from this thesis have international relevance, as the implications are not unique to this context alone. Table 32 provides a brief overview of the findings of this thesis that contribute to the current evidence on post-rape care services and they are then discussed in detail below.

Table 32. Summary of gaps in literature and findings in the thesis that contribute to post-rape care services

TOPIC	GAPS TO BE ADDRESSED IN THIS THESIS	BRIEF SUMMARY OF MAIN FINDINGS
Context	Provide evidence from LMIC especially South Africa as prevalence rates are higher and in some countries, including South Africa, rape is also more violent in general. (Chapter 2, 5 – 8)	General dearth of high quality literature. There is a further lack of literature from LMIC with most being descriptive publications or of lower quality. Results from South Africa are provided on specific focus areas but more robust research work is required.
Organisation of services	Review evidence of effectiveness for medical outcomes, use of other services and referrals, as some efforts have been made to look at legal outcomes with different models of post-rape care. (Chapter 4)	This Chapter highlighted the absolute lack of high quality studies globally where a post-rape model of care was evaluated for medical outcomes. Additionally, there were no studies on the effectiveness of IPV models of care from LMIC in terms of health outcomes, use of other services and referrals. Research that met the criteria were only from HIC and the majority were still of poor quality. Although there is a lack of high quality research from LMIC including South Africa, much can be learnt from their lessons. At present there is insufficient evidence to recommend any specific model of care for post-rape or IPV care, but evaluating the TCC model is a matter of urgency in South Africa. South Africa has already implemented various models of care but these have not been adequately evaluated. Proposed components in the model of care are discussed in the next section of the thesis.
Selection and capacitation of health care providers	Evaluate the effectiveness of the pilot of South Africa's national training curriculum in improving post-rape care knowledge and confidence in health care providers. (Chapter 5 & 6)	Although the previous fragmentary approach to training in South Africa was found not to have benefited providers in terms of knowledge and confidence, the national training curriculum was successful in improving this for health care providers from various areas of the country and levels of experience. However, training alone is clearly not sufficient for improving post-rape care. In study 2 it was noted that there were still gaps in certain content areas even after training, and literature in the field has noted how even trained providers are sometimes hampered from utilising their knowledge and skills by individual or health system factors. Providers entered the training with higher levels of confidence compared to knowledge, and a concern is that the training failed to address this imbalance. Studies in this field have considered the relationship between

		overconfidence and clinical care, and also the skills that providers require to interpret new evidence and apply it to their local setting. This points to a potential gap in the basic training of health care providers.
	Test for factors associated with baseline knowledge and confidence in South African health care providers and change in knowledge and confidence after training. (Chapter 5 & 6)	In Study 2, it was noted that, unlike findings from the literature, experience in post-rape care services was not associated with higher knowledge levels of providers at baseline or after training, while younger providers were more knowledgeable at baseline. No other studies were found that considered the effect of attitudes on training outcomes, and it was pleasing to note that although providers with a more appropriate rape attitude had a greater odds of having a higher baseline knowledge those with low empathy levels at baseline showed a significantly greater improvement in knowledge.
Strengthening the interpretation of medico-legal evidence in terms of genito-anal injuries	Provide data on genito-anal injury prevalence post rape from South Africa, by type and location, and for female survivors from wide age group. (Chapter 8)	The prevalence of genito-anal injuries post-rape has been reported in international literature to be between 10% and 87% depending on various factors. This wide range can make it difficult for health care providers to extrapolate findings from the literature to their local context. In South Africa, data from individual facilities reported figures of 32% to 42% and this study provided a prevalence of 49% from a provincial-wide sample. This study provides valuable data for health care providers to use as it is based on local practices of examination and reporting. The interpretation of injuries is complex especially when there are non-specific signs, and an international classification system of recording injuries for medical, legal and research purposes would be of value.
	Provide data on factors associated with the absence of genito-anal injuries post rape in the South African setting as there is a high prevalence of multiple perpetrator rape and violence, and the presence of injuries have been shown to influence legal outcomes (Chapter 7). (Chapter 8)	Consistent with the majority of international literature, the sexual experience of survivor was an important factor in the recording of injuries, and significant differences were noted by age group in this sample of survivors. No previous work was found that tested the association of age and the prevalence of genito-anal injuries in children <12 years of age and the findings from Study 3 corresponds to the physiological theory regarding the protective effect of oestrogen in very young children (<5 years of age) but against normative believes that there would be significant injuries in toddlers who have been raped. None of the international studies that tested for the association between number of perpetrators and the presence of genito-anal injuries reported significant findings whereas in Study 3 multiple perpetrator rape

		was significantly associated with the recording of injuries. This conforms to reports on the violent nature of rape in South Africa and discourses on the motivations behind multiple perpetrator rape. As with most other research, time between the rape and examination was a significant factor as there was a greater odds of having no injuries recorded in survivors who were examined after 2 days. Although a high number of survivors (84% in Study 3) are examined prior to this, there are some survivors who are potentially more likely to be examined later (e.g. children, disabled, elderly, rurally located, etc.) and understanding this association and applying it in the interpretation of examination findings is important. There is a debate on the effect of providers' experience on the reporting of injuries. In this thesis, providers with post-graduate qualifications had a greater odds of reporting injuries but interpreting this finding in the context of international literature and the research's study design is difficult. One does not wish to equate the recording of injuries with better quality of care, however having a skilled provider who has the right physical environment and resources to conduct a detailed genito-anal examination, recognise injuries and interpret findings is key.

In general, there is a lack of literature and work done in LMIC with research in the field being dominated by HIC studies, especially from North America. In addition, although there is a general absence of high-quality research with strong study designs, and analyses and presentation of data, this is especially a problem in studies done in LMIC. No studies were found that formally evaluated a post-rape health care programme or model of care for medical outcomes of survivors, referrals and use of related services. In only a few studies (54, 266, 296) was the delivery of health services evaluated, usually in pre- and post-intervention studies but these were usually offered in the acute phase of rape, and no study considering the impact of their care in terms of health outcomes. Furthermore, all of the models of IPV care that were formally evaluated were conducted in HIC (381, 382, 400–408), and most of the studies that were conducted in LMIC were conducted in urban settings or at specific research sites (2, 264, 270, 274, 278, 290, 292–295) with only a few being expanded to other settings or across the country (265, 271, 275, 277, 282). Yet, a number of different models of care from across the globe were described in this thesis, and some valuable work has been done in various countries that can be expanded on. For South Africa,

it is urgent that we evaluate the TCC model as there is great investment and efforts being made in expanding the model with only anecdotal evidence supporting it (36, 286, 288). More complex issues such as low number of survivors accessing services, poor follow-up, poor acceptance of and adherence to referrals, and high attrition in the legal process are not addressed and these are discussed in more detail in the next section.

Essentially though, any model of care would provide the desired outcomes in the correct setting. Defining the right setting for the right model is the challenge. One needs to consider all factors when developing a model with sustainability in mind. This should begin with a review of the current health care system in the country, its challenges and constraints in terms of service delivery of health care in general, and broader health system reforms. The police, judicial and social welfare system must also be assessed. Essentially though, not only is the delivery of the service important but the components of that service need to be considered as well.

As suspected from the review of training programmes offered in South Africa at the time, previous efforts had not added substantial value in improving content knowledge or providers' personal feeling of assurance in terms of the care that they were providing (Chapter 5). The training curriculum that was developed for the National Department of Health was found to have significantly increased knowledge and confidence of health care providers and it is clear from a review of the literature and the findings of the study that a national standardised curriculum with proper assessment was required in the country. The USA has made significant strides in this regard - SANE programmes have a standardised curriculum and national certification programme (169, 300, 301) and training standards have been published for sexual assault medical forensic examiners (443). Nonetheless studies have shown that general nurses in the USA and Canada do not receive a standardised level of training (302, 323) and international training has varied substantially with programmes covering either forensic medicine or sexual assault of adolescents/adults, children or both. In studies that were published, sexual assault training ran from 2 hours to 40 hours while the bulk of the studies included small sample sizes with seven studies having samples of less than 50 of which the smallest included 7 trainees, and only two studies had sample sizes of just over a hundred[16] (331–334, 336, 344, 345, 350–354, 357–359, 361–364). It was noted that a

[16] Sample sizes of trainees were not reported in all of the published studies.

few training programmes internationally had included a mix of providers (344, 345, 350–353, 361–364) with some offering additional or varied training for specific providers on certain days of training (344, 345). Chapter 5 and 6 presented findings from the first time a large national sample of doctors and nurses were trained together and improvements in knowledge were not found to be associated with regional location or qualification.

A common finding though in Chapter 5 and 6 was the providers had low knowledge and high confidence levels. This is a dangerous situation, as providers know less than they think they do as they struggle to recognise, acknowledge or express their uncertainty in delivering care (444). A number of studies have looked at the reasons for overconfidence in health care providers, and its relationship to accuracy in clinical care and diagnostic error (419, 445–447). Whereas many providers express high levels of competence or confidence to mask their lack of knowledge out of fear of losing their job or respect in the extremely hierarchical medical fraternity, there are other reasons for this discrepancy as well. A detailed review that considered nursing barriers to using research and developing evidence-based practices (448) found that key considerations were the skills required to interpret research findings and apply them to local clinical settings, the organisation of health services to facilitate such changes, and the support and motivation within the nursing fraternity to accept research findings over clinical experience and practice. Similarly, a review of physicians found that overconfidence could lead to errors during all steps of the diagnostic pathway (445). The study found that physicians make quick assumptions based on organ systems without considering other potential causes, they then seek data that confirms their diagnosis, prematurely confirm a final diagnosis, override guidelines, do not study the literature on questions that they have, and become complacent in the practice of care. Strategies to address overconfidence through education and training, during the consultation and through feedback mechanisms were reviewed, yet all have potential trade-offs and these need to be considered when implemented (445).

An important aspect of the National Department of Health training was that efforts were made to cover comprehensive post-rape care with specific attention being given to areas where it was assumed that providers would potentially have a poorer understanding, where there was evidence of poor quality of care, or where there were new concepts being introduced to providers. This meant that additional time and practical sessions were allocated to sexual rights, the examination and evidence collection in child survivors, documentation,

and laws and court procedures. In the findings, there were differences noted between content areas (Chapter 5) but the gaps in knowledge were not completely as expected, and although knowledge levels increased (Chapter 6), this occurred almost proportionately so that the differences between content areas remained. Most notable though was the substantial improvement in knowledge related to documentation and to some degree on the prevention and management of pregnancy, and in stark contrast, the lack of any improvement related to the laws and court procedures. Understanding the reasons for these substantial differences in the effect of the training on providers is important in reviewing and planning future training programmes. No other studies were found in the literature that considered variations in the impact of training on specific content areas of post-rape care.

Previous studies showed the providers who deal with the same type of patient (419, 449, 450), as well as those who are more involved in care of survivors had greater knowledge (257, 258, 260, 261) but whether they maintained a higher level of knowledge, increased their knowledge as they practised or a combination of the two is uncertain. In this thesis knowledge at baseline was surprisingly higher in younger providers compared to older provider (Chapter 5), which contradicts the findings from the literature. An additional concern was thus that only baseline confidence, and not knowledge, was greater in providers who dealt more with rape survivors through working at crisis centres or consulting a greater number of survivors. This is a worrying finding as it shows that South African doctors and nurses do not improve or maintain their knowledge and practice with time, but they feel more confident in delivering care. Older providers were not keeping updated with changes in practice and services, which is a concern, especially as some of the trainees on the course were considered to be experts. Alternatively though, it may be a marker of a presence or improvement in post-rape care training at an undergraduate level. Some efforts have been made to include post-rape care in undergraduate medical training (50), but it is unclear whether this was done in nursing curriculums and there is no research on the quality of undergraduate training in South Africa, although a few programmes have been described internationally (357, 358, 360). Furthermore, within the South African context, younger providers would have received their basic and undergraduate education after the start of democracy in the country, and may therefore have benefitted from higher quality education that recognises human rights issues. Yet, there is a need for follow-up research to see if knowledge levels in the group of providers trained in Study 2 improved after some time in practice, or whether there is a need for additional in-service sessions. If so, the improvement

of post-rape care training in undergraduate studies could also be considered to strengthen baseline knowledge prior to attending the national training programme.

The role of the health care provider in delivering the service should not be underestimated. There are important attributes of the provider that play a critical role in this aspect, which result in situations that survivors find healing versus those where they feel victimised (367, 368, 398, 451). The attitudes of providers are considered important in delivery of post-rape care - studies have reported a relationship between the acceptance of rape myths and blaming the survivor (373, 385, 452) but no previous work had assessed the effect of attitudes on training outcomes. In Chapter 5 the relationship between having an appropriate attitude towards rape and baseline knowledge was established though it had no impact on the level of improvement in knowledge during training (Chapter 6). This study found that inappropriate gender or rape attitudes and low empathy was not associated with poorer outcomes after training, and in actual fact, providers with low empathy at baseline actually showed a greater improvement in knowledge compared to those with higher levels of empathy. Whether empathy levels and attitudes of providers would still influence the delivery of care, even after an improvement in knowledge, would need to be further researched. Provider traits that have been found to be associated with blaming the survivor include providers who feel that they are in control of their own fate, those who have a rule following attitude and greater conformation to social norms, those who feel that people get what they deserve, and those who have a greater acceptance of rape myths (373, 385, 452–458). In addition, a metasummary of qualitative findings found that some providers lacked the relevant knowledge or training to adequately perform their jobs while others were incapable of using their training, knowledge, or position to effectively assist survivors (398). Those with poor communication skills overwhelmed the survivor with information. The competence, attitude and approach of the provider can thus play an important part in improving the acceptability and quality of service. In such cases, survivors are more likely to access services and where feasible, they are more likely to return. Poor treatment from medical and legal providers can have harmful effects on the health of survivors especially in relation to mental health, and can act as a barrier to accessing health services (451). The easiest and most common way of capacitating the provider is through training, and although studies have reported on improvements after training (308, 310–312, 363, 364, 459), we have to consider whether training alone is sufficient and whether it does lead to better outcomes for survivors. Training is usually one component of broader health system interventions and due

consideration needs to be given to specific components of training, which is discussed further in the next section.

Chapter 7 provided evidence on the important role that the presence of genito-anal injuries has on the legal progression of rape cases in South Africa, yet there is limited data from this country on the prevalence of injuries. As per the original rationale for conducting this research, the violent nature of rape and motivations behind perpetrating rape in South Africa, appeared to play an important role on the physical consequences for the survivor. The prevalence of all forms of genito-anal injuries in female rape survivors in this thesis (49%) was higher than the mean prevalence of 28% (range 21% - 44%) that was calculated from a number of studies where examination was done by direct visualization alone in specialized centres by forensically trained providers (194). Furthermore, multiple perpetrator rape in South Africa, unlike all other literature that tested this association (206, 210, 223, 224, 227, 229), was found to be significantly associated with the presence of injuries. Both of these findings are consistent with the assumption that rape is more violent in this country. Men who perpetrate rape in South Africa were found to have hostile views about women, they are much more likely to perpetrate physical violence against women (114, 130, 460), to be engaged in other violent activity (e.g. gang membership, criminal activity, etc.), and anger, punishment and entitlement were the most common motivators for raping (128, 130). These extend to multiple perpetrator rape, with punishment, sexual entitlement, entertainment and trickery all reported as motivations (129).

As with the majority of studies that tested for the association between age and presence of genito-anal injuries in general (174, 175, 204, 207, 213, 222, 247, 251), no association was found; however there was a marginal association in women older than 45 years of age compared to survivors less than 18 years of age. Other studies that have considered the prevalence of injuries in older survivors, have not had a comparison group including survivors of less than 12 years of age (215, 223, 227, 229), and in three publications older survivors had significantly more injuries than either adolescents or middle-aged women (215, 223, 227) while one study reported less injuries when compared to survivors 15 – 19 years of age (229). Surprisingly, no literature was found on the effect of age in children and genito-anal injuries after rape and an interesting pattern was noted in Study 3 in survivors under the age of 18 years who were not yet sexually active. As noted, this finding supports theories about the effect of oestrogen on the occurrence of injuries. However, some may argue that

there is a higher possibility of having suspected (and unconfirmed) cases of abuse in toddlers with thus less injuries, but we assume that this would not be very different to slightly older children and as the sample was limited to police cases, this implies that although not completely unfounded, the number of false cases are probably less than assumed.

A substantial percentage of genito-anal injuries were non-specific in nature (e.g. redness and tenderness) and the majority of factors that were tested were not found to be associated with the presence of injuries which makes the interpretation of injuries difficult. We need to understand this and be able to interpret it to make deductions from the findings. Research has shown an error in thinking that rape is always associated with injuries, and the lack of injuries means that no rape occurred, but educating the legal and judicial fraternity on their error in judgement and on the challenges of providing a definite conclusion is important, as medicine is not always an exact science. We also need to capacitate providers to be able to engage with legal colleagues more effectively and successfully. A key focus of the national training programme was thus on differentiating between types of injuries, accurately reporting on this in documentation and defending these findings in court, and the post-training findings showed a significant improvement in examination and documentation, although not with court processes (Chapter 6).

As with findings from the literature (204, 205, 216, 222, 223, 226, 229, 236, 251, 252), sexual experience of the survivor was found to be strongly associated with the observation of injuries (Chapter 8). This has important implications for survivors who have been sexually active as the odds of identifying injuries is 60% lower than survivors who are virgins. As this will also include women who are generally older where issues regarding consent are contested in court, it makes it harder to prosecute these cases and subsequently conviction rates are generally lower.

Despite studies that have reported on an increased prevalence of rape in the disabled population internationally (442), there are no quantitative reports to substantiate this in South Africa. Furthermore, there is no international literature that reports on injury prevalence and patterns in disabled survivors, although this may be affected by delays in reporting. This study found a greater odds of having no injuries in survivors who were disabled in the virgin population. Further research is required in the field to understand this in the context of grooming of survivors and consensual sexual experiences of disabled women.

As opposed to the findings in Study 3, where doctors with additional qualifications were found to have reported more genito-anal injuries (Chapter 8), two previous studies found that providers with less experience had higher rates of reporting genito-anal injuries after rape (199, 228). However, various studies have also noted that less experienced providers have poor knowledge on female genital anatomy and skills on interpreting injuries, especially in children with a potentially greater risk of over-reporting (257–261). Selecting providers who are able to properly identify injuries is more important than the actual prevalence of their reporting, and more importantly, having the ability to interpret findings in conjunction with the history and other findings, and present and defend this in court is crucial. Training of providers and providing them with an environment that only maintains, but enhances their knowledge and skills is important. This can occur through the location and functioning of services.

3. IMPLICATIONS FOR POST-RAPE CARE SERVICES

The findings of the thesis provided valuable insights into the organisation of services, selection and capacitation of providers, and use and interpretation of medico-legal evidence in rape cases, which can be used to strengthen the delivery of post-rape care services. The implications are presented under these sub-themes in Table 33 and discussed in some detail below.

Table 33. Summary of implications for post-rape care services

THEME	SUBTHEME	IMPLICATIONS FOR POST RAPE CARE SERVICES
Organisation of services	Location of services (Chapter 2, 4, 5, 6)	In the National Sexual Assault Policy it is noted that post-rape care is a specialist service that should be available 24 hours a day, and it should not be part of the PHC core package. This thesis provided the necessary evidence to validate this guiding principle. Providers who worked at regional level facilities had a greater odds of increased confidence after training compared to those working at PHC level. Providers were also more confident at baseline when they were more involved in patient care. A suitable location would therefore allow providers the opportunity to consult more survivors thus maintaining their competencies and confidence. Of concern though, is that knowledge levels need to improve as well. Taking other factors such as coverage, access, quality, and cost into account, full comprehensive care should be made available from

		community-health centre level upwards in the referral pathway (CHC– district hospitals – regional hospitals – tertiary hospitals – central hospitals). This would also be facilitated by the availability of other local services. It is neither feasible nor cost-effective to have full services available at clinic level unless required in rural locations.
	OCC vs. horizontal delivery of service (Chapter 2, 4, 5)	The findings show that providers who are more involved in the care of survivors and those working in crisis centres had a greater odds of having a higher baseline confidence level. Building on the point above, OCCs can provide an enabling environment for health care providers and if the reported number of cases is high and there is sufficient staff, this model is suitable. However, in areas with a low number of cases or where resources are constrained, a horizontal approach to delivering service can be implemented provided that the selection of providers is carefully considered. Costs could also be reduced and efficiency improved if post-rape and IPV services are combined. Ideally this would form part of the broader response to violence against women and children. The National Sexual Assault Policy states that services should provide connections via referral to other sectors that provide services to survivors and the OCC model is better suited for fostering intersectoral work but irrespective of the model, multi-agency support is required to achieve this principle. Issues related to referral are discussed in more detail below.
	Adult vs. child and adolescent survivors (Chapter 5 – 8)	There is a neglected need for services that are directed towards children and adolescents that needs to be addressed. This thesis provides further evidence that rape cases involving children (and adolescents) are different from those involving adults (Chapter 8), that levels of knowledge and confidence in health care providers differs for child versus adult survivors (Chapter 5 & 6), and that there are variations in the services offered to children compared to adult survivors (Chapter 7). Children and adolescents make up a substantial portion of rape cases (37% of the sample in Chapter 8) and therefore services and providers need to be prepared to provide high-quality care to them as well.
	To refer vs. manage internally (Chapter 4)	A number of models of care from HIC reported an improvement of referral rates yet the applicability of this in LMIC is uncertain. Referrals are considered to be a benefit, although we need to remember that referrals can be made for two reasons: to provide access to other health services or to provide access to services in other sectors (shelters, social welfare, legal aid, etc.). In many LMIC there are no options for referral for other health services and these have to be provided internally, while additional services outside of the health sector may also be limited. Indirect costs were not considered and in some instances would have increased through referral and additional follow-up.
	Outcome measures for evaluation	As many models of care have already been implemented in South Africa, and globally, ensuring monitoring and evaluation of these

	(Chapter 4)	services with standardised indicators for both acute and chronic health outcomes is the first initiative that should be undertaken. We must be acutely aware that the provision of care is sometimes affected by the competing goals or outcome measures of the service. For example, the goal to improve prosecution rates would focus on the credibility of witnesses and potentially affect the way in which providers view survivors attending the service. We need to realign health services to focus on health outcomes and measures of health service delivery in conjunction with legal outcomes.
Selection and capacitation of health care providers	Doctor vs. nurse (Chapter 5 – 6)	In the baseline study with health care providers, knowledge levels regarding post-rape were found to be higher in doctors compared to nurses, but this could actually be a reflection of the organisation of health services at the time. In South Africa there was always a general preference to be treated by doctors at hospital with reports of poor treatment and lack of knowledge by nurses at PHC level. Previous research with South African women regarding preferences of rape services reported a similar provider preference but the picture is changing with more patients attending clinics primarily where nurses are the primary providers. In view of the discussion on the organisation of care in South Africa, doctors will no longer be solely responsible for the delivery of care including examination and evidence collection and the role of nurses will become more important.
	Attributes of the provider (Chapter 5 – 6)	The National Sexual Assault Policy states that services should be provided by doctors and nurses who received training in sexual assault and post-rape care and the pilot of the national training programme found a significant improvement in knowledge and confidence in health care providers who attended it. In this thesis knowledge at baseline was higher in younger providers compared to older provider, which contradicts findings from the literature that report an increased knowledge with providers who were more experienced and who managed survivors regularly. The individual, organisation and health system factors influencing this need to be considered. Whilst women prefer having a female provider for post-rape care services, there was no significant difference in the knowledge and confidence of male versus female providers both at baseline and post-training. In addition, there is a lack of evidence on whether provider gender does matter. Although considered important and often discussed using qualitative data, there is not much literature on the quantitative evaluation of provider attitudes and its relationship to the delivery of services, though it is assumed that those with better attitudes would deliver a better service. It was clear from the findings of study 2 that those who had a greater understanding of the context of rape and the myths related to these entered the training programme with higher levels of knowledge but it was reassuring to know that providers who had the greatest potential and need to learn actually did during the training curriculum.

		Perpetration and experience of rape or IPV was high in health care providers but this was not associated with baseline knowledge and confidence, or change in either due to training. Although assumptions are made about whether experience of rape or IPV affects care by providers, there is no clear evidence of this.
Organisation of services & Selection and capacitation of health care providers	Managing vicarious trauma (Chapter 5 – 6)	Providers had a poor understanding of vicarious trauma during the training. This is extremely important considering the high prevalence of rape or IPV in this group of providers. It is unclear if providers struggled with concept of vicarious trauma during the training or with the mechanisms of coping. Further work on improving provider's understanding of vicarious trauma is required in addition to addressing health system factors that would minimise vicarious trauma and support providers.
Selection and capacitation of health care providers	National training programme vs. local initiatives (Chapter 5 – 6)	Providers who attended the pilot of the national training programme had low levels of knowledge and previous training was not associated with a greater odds of having better knowledge. This implies that previous local initiatives were not effective in improving providers' knowledge. The national training programme was required as it followed educational practices of having learning objectives, facilitator guides, standardised tools and content for teaching, and it was evaluated. However, based on the findings related to the knowledge and confidence of providers after training, more in-service training and updates for older providers, who are working longer in the services, should be considered. Further research is required on whether the training programme is being implemented as piloted and rolled out as planned. As a standardised programme, the training could also be adapted for undergraduate curriculums.
	Content of training (Chapter 5 – 6)	Training needs to cover all aspects of care without focusing on either legal or medical requirements. Training needs to use adult-based teaching approaches. Further research needs to be done on areas where gaps remained after the pilot training programme and on areas where there were substantial increases in knowledge to understand the reasons why this occurred and to use for adapting future training.
	Length of training (Chapter 5 – 6)	The 2-week training programme was required to cover the content in-depth using more applied approaches to training and it was found to be consistent with standardised training for SANEs. Addressing the challenges of having providers out of the services for the period needs to be considered against the long-term benefit of having providers return more knowledgeable and confident in managing survivors.
	Evaluating training programmes (Chapter 6 – 6)	Training programmes should include an evaluation component where providers are not only objectively assessed for knowledge and confidence levels, but competency is also assessed through a practical component. Although attempts were made to do this in the national training programme using local experts, this was not

		successful. Consideration needs to be given on how best to conduct this, either at the provincial level or within the facilities where providers work.
Strengthening the interpretation of medico-legal evidence in terms of genito-anal injuries	Reporting of injuries (Chapter 8)	In the thesis it was noted that doctors with post-graduate qualifications had a significantly greater odds of reporting injuries but there was still a dependence on direct visualisation only for examination. In South Africa we need skilled providers, better availability, training on and utilisation of special examination equipment, a standardised system for recording injuries by type, location, and severity, and a revised medico-legal form (J88) that will facilitate these processes.
	Interpreting and presenting genito-anal injuries findings (Chapter 8)	Health care providers need to use local data on the prevalence of genito-anal injuries and factors associated with these after rape, which is provided in this thesis. Somewhat unexpected findings were noted in reporting of injuries in children by age. Health care providers require skills to understand the literature and apply it to their current settings when concluding on their examinations and presenting in court.

3.1. ORGANISATION OF SERVICES

At present, we know that few rape survivors access services and that loss to follow-up is relatively high (47, 109, 368, 451). Interventions in South Africa that targeted the poor completion of PEP showed improvements from a baseline of 20% to a maximum of only 58% (57, 62, 266), and SANE programmes, which could potentially be considered to be a model of best practice, have succeeded in improving follow-up rates, but even at best, only half of their patients returned for care (169, 311, 321, 324, 326). In addition, very few cases are prosecuted even with the SANE model in the USA (169, 311) and the TCC model in South Africa (284, 285, 288). Despite these findings, the improvements that are reported provide some indication that the delivery of health services can play an important role in promoting access and follow-up, and hopefully improving medical and legal outcomes, and attrition of survivors in both systems.

Many models of post-rape care in the literature have focused on improving the availability of services primarily through an increase in the number of facilities offering the services, either in an OCC or through a horizontal approach. Most also attempted to make more services available through intersectoral work and referrals. Affordability of care was not often considered in HIC models, and in LMIC it was mainly addressed by waiving user fees. The focus of acceptability has been through improving the quality of services, and by either

reducing the number of contacts or by improving the referral between services. Although no model of post-rape care was formally evaluated, many lessons could be learnt from challenges faced in other LMIC when considering a model of care. Critical issues that arose related to the availability of human resources with the required skills and attitudes and the maintenance of their knowledge and competencies, waiting times and experiences of survivors, and the costs of running the services. For example, while addressing issues related to quality, challenges remained with provider attitudes, and none of the studies considered cultural acceptability directly unless through the training offered as part of the package of service. Also, the potential increases in indirect costs for survivors were not considered when services increased referrals and follow-up care, and as we promote comprehensive post-rape care this will require further and potentially longer follow-up. Depending on the study setting, indirect costs limit access to survivors. These are harder to address because there has to be a balance between having services offered in most local setting against the fact that this is costly and there are limited resources. On the other hand, having centralised services increases indirect costs for survivors. Furthermore, problems related to referrals and follow-ups resulted in models of care being less efficient than conceptualised. In addition, it has been recommended that the primary provider who examines the survivor in the acute care should not be involved in follow-up care, counselling and advocacy as this may lead to their objectivity being questioned in court (169, 345). This further complicates matters in LMIC.

Taking all of the lessons into consideration, it is clear that services must be made available as close to survivors as possible but there should be a sufficient number of survivors accessing the service to make the service cost-effective and also allow providers the opportunity to maintain their skills. With the high prevalence of rape in South Africa, this implies that services should be available at all levels of the health care services except at PHC clinics, taking into consideration the ease of availability of additional services. For the most part, health care providers at this level should be equipped to manage acute problems, provide appropriate advice, offer suitable medical care and refer appropriately. Similarly very few survivors should be consulted at central hospital level, unless acutely ill and providers should be equipped in providing post-rape care in emergency situations. Although OCCs are considered a better potential solution, there are drawbacks with this option. If additional human resources and skills are limited, providing other services internally would probably need to be done by capacitating staff to have supplementary skills as opposed to creating a standalone centre. Attempts were made to do this with mental health skills in the national

training programme (Chapter 5 and 6) but knowledge levels remained low even after training. Capacity of current staff to provide additional services may also be hampered by workloads. For example, rape advocates are used frequently in HIC and four models included in Chapter 4 included their services (400, 402, 404, 407). Attempts have been made to undertake a similar approach in South Africa (266, 274) but this is resource intensive and expensive. In the IPV model, when trying to provide a counselling component using existing service providers, a major challenge was found to be workloads and lack of necessary skills. Thus we have to recognise that even trained providers are influenced by health system factors (58, 64, 313, 328, 329). The organisation of services should thus support providers in delivering care, enabling them to implement the knowledge and skills that they have been trained on. This also needs to fit into government's broader GBV response to violence against women and children.

Paediatric care post-rape is complex and requires specialised skills. Yet, it is an area that is found to be neglected both internationally (321) and in South Africa. Misdiagnosing or over-diagnosing child sexual abuse has serious consequences for both the survivor and suspected perpetrator. Providers in this field need to be experienced, knowledgeable, and conservative. An expert in the field from the USA suggests that there should be two levels of standardised training and practice for managing child survivors (261). The first should include generalists who need to know normal variations, non-specific signs and clear signs of sexual abuse, while the second should include specialists who would be able to distinguish more subtle differences between the extremes of normal and abnormal examination findings and who would remain updated and immersed in the field. Although an ideal, and available in some settings in South Africa, this will not be feasible everywhere. In the vast majority of cases, children would be managed by generalists and thus sufficient training should be provided to all health care providers. However, even in the USA, it was noted that there are no standards for the training of doctors in paediatric care, and there is no certification process or continuing education programme (261).

Effectiveness in terms of outcomes of post-rape care services has not been well investigated and researched. In the thesis we note that there was no evidence to prove that one model of care better than another. We need to define better health outcome measures to assess services as opposed to service delivery or process measures. Measuring the level of referrals as a marker of improved services with a model of care is questionable and should ideally be

focused on whether the desired service of high quality was received by the survivor. Although it is presumed that the manner in which post-rape care services are delivered can influence survivors' access to services and long-term follow-up; this has not yet been proven in research studies. Findings from a single study conducted in one facility in the USA found that 28% of survivors returned for follow-up care and that the odds for following up was significantly higher in survivors who had a previous mental health condition, and in those who were examined by a SANE or who had social support available (463). Yet, there was a significantly lower odds of returning if the survivor had a disability or current mental illness. Further research is required to understand the individual, social and health system factors associated with increased follow-up in the local context and to include this as an outcome measure in health system's interventions.

3.2. SELECTION AND CAPACITATION OF HEALTH CARE PROVIDERS

Post-rape services are strongly intertwined with IPV and other sexual and reproductive health services, and therefore a minimum level of competency is expected from all health care providers, although the medico-legal requirements accompanying post-rape care places an additional expectation and requirements on their skill set.

In Chapter 4 doctors had a higher baseline knowledge level compared to nurses, but this could be related to the role that nurses played in post-rape care at the time, where very few were trained, and of those who were trained, even less were actually involved in the delivery of post-rape care. Similar to general patient preferences (461, 462, 464), survivors of rape in South Africa highly regarded treatment by doctors over that of nurses (75). However, we have seen an increasing number of patients accessing lower levels of care, from 45% in 2004 to 61% in 2014 (465), and accepting this as a suitable entry point for health care, however wanting reassurance that nurses would be adequately qualified and they would be referred to a doctor at a hospital if necessary (466). As noted in the literature, efforts have also been made to recognise forensic nurse training in South Africa (60) and nurses will in future play a more substantial role in the delivery of care. International studies have shown that nurses with sufficient training can function independently and greatly add value to the service in terms of the quality of care (309, 362). In the USA, SANEs are well recognised and deliver high quality services that survivors are very satisfied with (74, 308–317) and a study from rural South Africa found that nurses delivered high quality care compared to previous

services (54). However, as noted in Chapter 2, SANE programmes are not without challenges. Most SANEs worked in emergency departments doing other work, and were not solely based in crisis centres (309, 320, 321) because programmes were not cost-effective with a low number of patients. SANEs were then paid a fee for examination (301). This approach would probably not be feasible in the South African setting, as the status quo would remain where providers are caught between managing emergency patients and rape survivors, resulting in long waiting times for some. Obtaining a balance between having dedicated staff versus the cost and delivery of other services is a challenge. As the potential role of nurses were identified as important and the change in their functioning anticipated, efforts were made to include nurses in the national training programme (Study 2) but it was noted that nurses still left the course with a lower level of knowledge compared to doctors (Chapter 5). This should be addressed in future work.

Although survivors prefer having a female provider and ideally should be able to have one (75, 467), Study 2 reported no association in providers' knowledge and confidence with sex, and research in the field has not shown any difference in the quality of care (398, 468). Limiting the services to only female providers would be hard to achieve with the current human resource shortages in the country although having more nurses providing care could increase the number of female providers delivering care. Restricting the delivery of service by sex could also possibly exclude male providers who are knowledgeable in the field, non-judgemental and sensitive, which was found to be important for survivors (75, 398, 399). There has been limited quantitative research on attitudes and post-rape care services (49, 417, 418), and in Study 2, providers with a more appropriate rape attitude had a greater baseline knowledge level. These providers may have studied informally on the subject through readings and discussions with more experienced colleagues, or they may have absorbed more information during other training; however, previous training alone was not found to be significantly associated with baseline knowledge.

There were high levels of rape or IPV exposure and perpetration in South African providers, who as a subset of society are not immune to the experience of violence in their personal environments (469). In an early programme in the USA nurses who had experienced rape in the last year were excluded from providing care (301), however, measuring exposure of providers to rape or IPV is sensitive and could be considered unethical. Furthermore, there is no evidence that the experience of rape or IPV affects care by providers (68) and no study has

considered the effect on providers who are perpetrators. In a study conducted in South Africa, no difference was found in the quality of care amongst nurses who experienced IPV compared to those who had not, but those who had intervened or experienced IPV through others provided better quality of care (69). A second qualitative study found that nurses in Johannesburg were able to take action in their personal abusive relationships, yet struggled with seeking help in their workplaces due to concerns related to privacy and confidentiality, although they were able to support IPV survivors who attended the services (469).

Vicarious trauma, otherwise known as compassion fatigue, can negatively affect providers' personal, social and sex life and professional conduct at work with survivors (470), yet it has been overlooked in research on health system interventions and provider training. Studies have reported that the more rape survivors providers were in contact with, the more they blamed survivors (453, 471), which could be as a result of burnout or vicarious trauma. Both provider-level and health system interventions are required to address these potential negative consequences on providers (472). Training can be used to raise awareness in providers about such risks and provide them with strategies that they can use to minimize and address these consequences. However organisational support is also required in terms of the culture, environment, group engagement, supervision, and work arrangements (472). Managing workloads is of particular concern in LMIC, where resource shortages may require a reallocation of the health care provider to another service if feasible.

Training on post-rape care should not be a once-off event, it should be an on-going process and ideally should begin at an undergraduate level as it highly prevalent, has significant health implications, and medical students may be affected by it themselves (359). Major barriers to adding training on rape or IPV, especially at an undergraduate level, are a lack of recognition of the prevalence and long-term medical and public health implications, dealing with the complexity of the issue, the addition of more training resulting in providers being out of service or undergraduate curriculums being overloaded, dealing with trainees prior experience of abuse, and having sufficient trainers with relevant expertise (473). Linked to this is the lack of evidence on the required content of the course and expected outcomes. The national training programme provided a standardised curriculum with teaching aids to ensure consistency in training across the country so that no provider was disadvantaged due to location. It covered all of the important medical and legal requirements, and attempted to address multifaceted skill development e.g. testifying in court. The thesis provided evidence

of its effectiveness, however gaps in knowledge still existed in specific content areas after the training. Mental health care was of special concern. In most models of care that were presented in the literature, mental health was delivered by someone besides the primary care provider who was responsible for examining the survivor and collecting evidence (2, 55, 58, 265, 266, 270, 271, 276, 278, 292–296, 400, 402, 404, 407, 408). This was usually a counsellor, psychologist, social worker or advocate, and in very rare situations, a psychiatrist. In this training programme, a unique attempt was made to train general doctors and nurses to provide this care. However, knowledge levels remained low after training, and one would need to conduct further research to see if providers used these new skills and if they were able to overcome health system challenges in terms of the time required to deliver the service and the need to follow-up specific patients.

Many previous studies on training programmes for post-rape care did not describe their method of training (336, 351, 356, 361, 362) or included only didactic teaching approaches (333, 352, 353, 357, 358). However, when dealing with adult trainees, different teaching formats should be used whenever possible to allow diverse trainee-types to apply their knowledge and skills, and to engage with the topic (383, 450, 473). Training should also be of sufficient duration to impart knowledge, affect change and provide opportunities for development and practice (473). Studies have used varied measures to evaluate post-rape training programmes (308, 312, 331, 332, 350–353, 357–359, 361–364), but three potential components can be considered. The first includes an assessment of training materials, the second an evaluation of the training process (e.g. were the materials used as intended, who attended the training, etc.), and finally outcomes of the training can be assessed including professional competencies that were expected to be developed through the programme (473). Ideally though, the training should primarily have an impact on longer-term medical (e.g. mental health, HIV sero-conversion, etc.) outcomes, in addition to legal outcomes (prosecution, conviction, etc.).

3.3. STRENGTHENING THE INTERPRETATION OF MEDICO-LEGAL EVIDENCE IN TERMS OF GENITO-ANAL INJURIES POST-RAPE

Post-rape care services requires skilled providers who have a good understanding of normal genital variations and who can recognise injuries and report on them in a meaningful way through the use of a standardised system for reporting. Changes to the medico-legal (J88)

form are required so that it promotes better reporting practices while discouraging potentially damaging behaviours. Although examination with a naked eye is acceptable in court, providing a proper examination bed, sufficient space to conduct the examination comfortably, and having a good light source is essential. Using special examination techniques would be of benefit but adequate training is required in the utilisation of the techniques and subsequent interpretation of findings. There is a risk of having a high false positive rate with such techniques if the provider is not suitably trained in the clinical practice.

Health care providers should be able to use and interpret local data when documenting or testifying in court. They should note that, in the South African context, many patient and rape characteristics were not significantly associated with the presence of injuries, while having no previous sexual experience and multiple perpetrator rape were strongly associated with the presence of injuries. The time interval between the rape and examination also plays an important role, therefore direct access to health services should be encouraged and the importance of a prompt examination be emphasised with police. The organisation of services to aid early and prompt access to care is critical. Health care providers can also assist in expediting this process by not delaying the examination of the survivor unnecessarily.

4. LIMITATIONS

The limitations for each study have been presented in Chapter 3 and in the individual chapters for the studies (Chapters 4 – 8) but there are some overall limitations that need to be considered. As the data from Study 2 and 3 was somewhat dated it would be valuable to conduct more current research. Nevertheless, the findings still addressed current gaps in the literature and are very relevant in the South African context providing data on larger samples than previous work in the country, which can now be used as a baseline for further research work. Many of the tools were used for the first time in these studies and needed further testing for validity, although there were components of the tools that were based on previously tested instruments.

As three different studies and datasets were used, I could not test for theories across the studies, although related findings from the studies were discussed in conjunction. Although most provinces in the country had provider representation in Study 2, Study 3 was limited to

one urban province. Obtaining a national sample that would allow for testing of regional variations would be of value.

Study 2 and 3 were cross-sectional studies, which limited the testing to associations and not causality. Reliability of data collection in all studies was maintained by providing training to fieldworkers, piloting the data collections tools, and strictly managing the data collection process. The potential of missing data resulting in bias is a risk in all studies but efforts were made to minimise it, and where possible this was tested for (Chapter 6) and also discussed in detail in individual study limitations. Although this thesis has listed potential implications for post-rape care services based on the evidence provided, these have not been tested as part of the thesis, and therefore I cannot claim that these would definitely be effective in improving post-rape health care services in the country. Nevertheless, the findings from this thesis addresses gaps in the current body of literature on post-rape care compared to the majority of the work that has been done in HIC.

5. FUTURE RESEARCH

Additional research questions arose from the findings of this thesis, its limitations and the suggested implications regarding post-rape care. In terms of the organisation of post-rape care services, high quality research is required on models of post-rape care, and in the South African context it is critical that we evaluate the TCC model urgently. Defining monitoring and evaluation indicators for post-rape care would be an important aspect of this research. In general we know that follow-up rates, attendance for referral and completion of PEP is low but solutions for addressing this have still not been found, and additional research on this area is necessary. Further work is required on the selection of providers for the delivery of post-rape care, especially doing work on attitudes of providers and the quality of care delivered.

In terms of the National Department of Health's training programme, it would be useful to assess if the training is being implemented and rolled-out as planned, or whether adjustments were made and why this occurred. Further research on large samples with longer-term outcomes of training that are well measured, is required. This will help to understand whether knowledge and confidence levels of providers improve or deteriorate with time, how these are associated with quality of care, and whether individual and system factors impact the delivery of care. Studying the implementation of a practical component of training with clear assessment processes would also be of value. Regarding the content of training, we

need to still understand why there were variations in the improvement of knowledge by content area, and whether lessons could be obtained from these for enhancing the training programme. Finally, there is a lack of research on the level, quantity and quality of undergraduate training on post-rape care in medical and nursing curriculums in South Africa.

For genito-anal injuries post-rape, testing a standardised system for recording of injuries and a revised J88 form would be useful, in addition to the use of special examination techniques in LMIC. Larger national datasets are required to build on the prevalence and patterns of injuries in children, older women and disabled survivors to further understand the nuances in these subpopulations of survivors.

6. CONCLUSION

This thesis has shown that although rape is a public health problem with a substantial burden of ill health, there are deficiencies in the delivery of post-rape care services with an overall lack of research in the field, especially from LMIC. As highlighted in Chapter 1, South Africa has made some strides in addressing the burden of rape within the confines of the health system, yet this has stagnated in recent years. If post-rape care is not systematically organised, it can actually be a disservice to survivors and providers, and place an additional burden on resources without any benefit. This thesis provides sound evidence for some of the basic principles in the current national policy and guidelines, however it is clear that there remains substantial gaps that need to be addressed. Furthermore, the sound implementation of these has not been monitored and evaluated for the required outcomes. Other programmes such as termination of pregnancy services or the HIV/AIDS treatment programmes have also suffered similar neglect during specific time periods despite strong research evidence on the value of their implementation. These have faired better once there was strong social engagement and political support with an understanding for the need to harvest change. The thesis provides evidence that can be used to improve the delivery of post-rape care but these must be linked to the broader responses to GBV and sexual and reproductive health needs. The findings of this thesis are most relevant to the South African context but have significance across the globe. Delivering post-rape care services is complex and much work still needs to be done in the field.

REFERENCES

1. World Health Organization. 2014. Violence against women. Available: http://www.who.int/topics/gender_based_violence/en/ [Accessed 13.11.2014]
2. Ashford, L. & Feldman-Jacobs, C. 2010. The crucial role of health services in responding to gender-based violence. Washington, DC: USAID, IGWG, PRB. Available: http://www.prb.org/igwg_media/crucial-role-hlth-srvices.pdf [Accessed 14.01.2015]
3. García-Moreno, C. 2002. International conference on "the role of health professionals in addressing violence against women": An overview. *Int J Gynaecol Obstet Off Organ Int Fed Gynaecol Obstet*,78(1):1–4.
4. United Nations General Assembly. 1979. Convention on the elimination of all forms of discrimination against women and its optional protocol. New York: United Nations. Available: http://www.un.org/womenwatch/daw/cedaw/ [Accessed 03.12.2014]
5. World Conference on Human Rights. 1993. Vienna declaration and programme of action. Vienna, Austria: United Nations. Available: http://www.ohchr.org/Documents/ProfessionalInterest/vienna.pdf [Accessed 03.12.2014]
6. United Nations General Assembly. 1993. Declaration on the elimination of violence against women. New York: United Nations. Published 20 Dec 1993. Available: http://www.un.org/documents/ga/res/48/a48r104.htm [Accessed 03.12.2014]
7. United Nations. 1994. Report of the international conference on population and development. Cairo: United Nations. Available: https://www.unfpa.org/sites/default/files/event-pdf/icpd_eng_2.pdf [Accessed 03.12.2014]
8. UN Women. 1995. Beijing declaration and platform for action. Beijing, China: UN Women. Available: http://www.un.org/womenwatch/daw/beijing/pdf/BDPfA%20E.pdf [Accessed 03.12.2014]
9. UN Women. Elimination and prevention of all forms on violence against women and girls. 2013. Commission on the status of women. Agreed conclusions. New York: United Nations. Available: http://www.unwomen.org/~/media/headquarters/attachments/sections/csw/57/csw57-agreedconclusions-a4-en.pdf [Accessed 03.12.2014]

10. Organisation of African Unity.1981. African charter on human and people's rights. Banjul: African Union. Available: http://www.achpr.org/instruments/achpr/ [Accessed 07.12.2014]
11. Southern African Development Community. 1997. Declaration on gender and development. Blantyre: SADC. Available: http://www.sadc.int/files/7613/5292/8380/Declaration_on_Gender__Development_1997.pdf [Accessed 07.12.2014]
12. Southern African Development Community. 1998. Prevention and eradication of violence against women and children (Addendum to the SADC Declaration on gender and development). Grand Baie: SADC. Available: http://www.achpr.org/instruments/eradication-violence-woman-sadc-addendium/ [Accessed 07.12.2014]
13. García-Moreno, C., Hegarty, K., d'Oliveira, A.F., *et al.* 2015. The Health-systems response to violence against women. *Lancet*,385(9977):1567–79.
14. World Health Organization, London School of Hygiene & Tropical Medicine.2013. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva: WHO. Available: http://apps.who.int/iris/bitstream/10665/85239/1/9789241564625_eng.pdf [Accessed 07.12.2014]
15. Joyner, K. & Mash, B. 2012. A comprehensive model for intimate partner violence in South African primary care: Action research. *BMC Health Serv Res.*,12:399.
16. Norman, R., Schneider, M., Bradshaw, D., *et al.* 2010. Interpersonal violence: An important risk factor for disease and injury in South Africa. *Popul Health Metr.*, 8:32.
17. Muller, R., Gahan. L. & Brooks, L. 2014. Too costly to ignore – the economic impact of gender-based violence in South Africa. Johannesburg, South Africa: KPMG. Available: https://www.kpmg.com/ZA/en/IssuesAndInsights/ArticlesPublications/General-Industries-Publications/Documents/Too%20costly%20to%20ignore-Violence%20against%20women%20in%20SA.pdf [Accessed 14.01.2015]
18. South Africa. Sexual Offences Act 23 No. of 1957 (as amended).
19. South Africa. Criminal Law (Sexual Offences and Related Matters) Amendment Act No. 32 of 2007.
20. Teddy Bear Clinic and Another v Minister of Justice and Constitutional Development and Another 2013 (12) BCLR 1429 (CC)

21. South Africa. Domestic Violence Act No. 116 of 1998.
22. Department of Health. 2000. The primary health care package for South Africa - A set of norms and standards. Pretoria, South Africa: DoH. Available: http://www0.sun.ac.za/ruralhealth/ukwandahome/rudasaresources2009/DOH/35%20PHC%20package.pdf [Accessed 13.09.2014]
23. South Africa. Choice on Termination of Pregnancy Act No. 92 of 1996.
24. Department of Health. 2001. Policy guidelines for youth and adolescent health. Pretoria, South Africa: DoH.
25. Department of Health. 2002. National contraception policy guidelines. Pretoria, South Africa: DoH.
26. Department of Health. 2003. National management guidelines for sexual assault care. Pretoria, South Africa: DoH. Available: http://www.cecinfo.org/custom-content/uploads/2012/12/SouthAfrica-Sexual-Assault-Guidelines-2003.pdf [Accessed 03.01.2012]
27. Department of Health.2005. National sexual assault policy. Pretoria: DoH.
28. South African National AIDS Council. 2007. HIV and AIDS and STI Strategic Plan (NSP) for South Africa 2007-2011. Pretoria, South Africa: South African National AIDS Council. Available: http://data.unaids.org/pub/ExternalDocument/2007/20070604_sa_nsp_final_en.pdf [Accessed 13.09.2014]
29. South African National AIDS Council. 2011. National Strategic Plan (NSP) on HIV, STIs and TB 2012 – 2016. Pretoria, South Africa: South African National AIDS Council. Available: http://www.thepresidency.gov.za/MediaLib/Downloads/Home/Publications/SANACCallforNominations/A5summary12-12.pdf [Accessed 13.09.2014]
30. Department of Health. 2012. National contraception and fertility planning policy and service delivery guideline. Pretoria, South Africa: DoH. Available: http://www.health-e.org.za/wp-content/uploads/2014/05/ContraceptionPolicyServiceDelGuidelines2013.pdf [Accessed 13.09.2014]
31. Department of Health. 2012. National contraception clinical guideline. Pretoria, South Africa: DoH. Available: http://www.health-e.org.za/wp-content/uploads/2014/05/National-contraception-clinical-guidelines.pdf [Accessed 13.09.2014]

32. Department of Health. 2012. Draft adolescent and youth health policy. Pretoria, South Africa: DoH. Available: http://www.rmchsa.org/wp-content/resources/resources_by_theme/YouthHealth/AdolescentYouthHealthPolicyDraft_11December2012.docx [Accessed 13.09.2014]
33. Departments of Correctional Services, Department of Defence, Department of Intelligence, *et al.* 1996. National crime prevention strategy. Pretoria, South Africa: Department of Safety and Security. Available: https://www.issafrica.org/crimehub/uploads/National-Crime-Prevention-Strategy-1996.pdf [Accessed 13.09.2014]
34. Office on the Status of Women & South African Office of the Presidency.2000. South Africa's national policy framework for women's empowerment and gender equality. Pretoria, South Africa: South African Office of the Presidency. http://www.cabsa.org.za/content/south-africas-national-policy-framework-womens-empowerment-and-gender-equality-2000 [Accessed 13.09.2014]
35. Sexual Offences and Community Affairs Unit (National Prosecuting Authority) & UNICEF. 2006. The Kopanong Declaration: 365 days of action to end violence against women and children. Kopanong: National Prosecuting Authority. Available: http://www.unicef.org/southafrica/SAF_resources_365daysdeclaration.pdf [Accessed 13.09.2014]
36. South African Police Service. n.d. Family violence, child protection and sexual offences unit. Available: http://www1.saps.gov.za/org_profiles/core_function_components/fcs/establish.htm. [Accessed 06.09.2014]
37. Artz, L., Smythe, D., Leggett, T. 2004. Reflections on integrated rape case management. Cape Town, South Africa: University of Cape Town.
38. National Prosecuting Authority of South Africa. 2008. Sexual Offences and Community Affairs (SOCA) Unit. Available: http://www.npa.gov.za/ReadContent412.aspx. [Accessed 06.09.2014]
39. Department of Justice and Constitutional Development. 2013. Report on the re-establishment of sexual offences courts: Ministerial advisory task team on the adjudication of sexual offence matters. Pretoria, South Africa: Department of Justice and Constitutional Development, 2013. Available: http://www.justice.gov.za/reportfiles/other/2013-sxo-courts-report-aug2013.pdf [Accessed 13.09.2014]

40. Müller K, Saayman G. 2003. Clinical Forensic Medicine: Completing the form J88-What to do and what not to do. *South Afr Fam Pract.*,45(8):39–43.
41. Department of Social Development. 2003. Policy framework and strategy for shelters for victims of domestic violence. Pretoria, South Africa: Department of Social Development.
42. Department of Social Development. 2009. National policy guidelines on victim empowerment. Pretoria, South Africa: Department of Social Development. Available: http://www.dsd.gov.za/index2.php?option=com_docman&task=doc_view&gid=84&Itemid=3 [Accessed 13.09.2014]
43. Department of Social Development. South African integrated programme of action addressing violence against women and children. Pretoria, South Africa: Department of Social Development. Available: http://www.dsd.gov.za/index2.php?option=com_docman&task=doc_view&gid=607&Itemid=39 [Accessed 09.07.2015]
44. South Africa. Children's Act No. 38 of 2005.
45. Human Rights Watch. 1995. Violence against women in South Africa: A state response to domestic violence and rape. New York: Women's Rights Division, Human Rights Watch. Available: https://www.hrw.org/report/1995/11/01/violence-against-women-south-africa/state-response-domestic-violence-and-rape [Accessed 03.01.2012]
46. London, L., Hoffman, M., Jacobs, T., *et al.* 1996. Assessment of alleged rape victims. *S Afr Med J*, 86(7):844–45.
47. Department of Health. 2002. South Africa demographic and health survey 1998. Pretoria, South Africa: DoH. Available: http://www.mrc.ac.za/bod/dhsfin1.pdf [Accessed 06.12.2014]
48. Martin, L.J. 2002. Forensic evidence collection for sexual assault: A South African perspective. *Int J Gynecol Obstet*,78(1):105–10.
49. Christofides, N., Jewkes, R., Webster, N., *et al.* 2005. Other patients are really in Nneed of medical attention: The quality of health services for rape survivors in South Africa. *Bull World Health Organ*,83(7):495–502.
50. Brouwer, I. 2008. Training and development needs of medical practitioners involved in the medico-legal examination of survivors of sexual assaults. *S Afr Med J*, 95(11):837.
51. Jina, R. 2006. Assessing the use of sexual assault evidence collection kits from six provinces in South Africa. MMed thesis. University of the Witwatersrand.

52. Roos, I., Nel, M. & van Vuuren M.V. 2006. Profile of rape victims treated at the Tshepong Victim Support Centre, National District Hospital, Bloemfontein. *S Afr Med J*,96(7):615.
53. Kim, J., Mokwena, L., Ntlemo, E., *et al.* 2007. Developing an integrated model for post-rape care and HIV post-exposure prophylaxis in rural South Africa, FRONTIERS Final Report. Washington, DC: Population Council. Available: http://pdf.usaid.gov/pdf_docs/PNADK615.pdf [Accessed 09.01.2015]
54. Kim, J.C., Askew, I., Muvhango, L., *et al.* 2009. Comprehensive care and HIV prophylaxis after sexual assault in rural South Africa: The refentse intervention study. *BMJ*, 338:b515.
55. Vetten, L., Kim, J., Ntlemo, E., *et al.*2009. From paper to practice: Lessons in the implementation of health and victim empowerment policy applicable to rape survivors. Johannesburg: Tshwaranang Legal Advocacy Centre to End Violence Against Women (TLAC).1-6. Available: http://www.shukumisa.org.za/wp-content/uploads/2010/11/PolicyBriefRapeSurvivors_LR.pdf [Accessed 13.09.2014]
56. Human Rights Watch. 2004. Deadly delay: South Africa's efforts to prevent HIV in survivors of sexual violence. New York: Human Rights Watch. Available: http://www.hrw.org/sites/default/files/reports/southafrica0304.pdf [Accessed 13.09.2014]
57. Abrahams, N., Jewkes, R. 2010. Barriers to Post Exposure Prophylaxis (PEP) completion after rape: A South African qualitative study. *Cult Health Sex*,12(5):471–84.
58. Rees, K., Zweigenthal, V., Joyner, K. 2014. Implementing intimate partner violence care in a Rural Sub-District of South Africa: A qualitative evaluation. *Glob Health Action*,7:24588. 10.3402/gha.v7.24588 [Accessed 16.01.2015]
59. Mabuda, T. 2013. Circular 3/2013: Data-base for post basic programmes. Available: http://www.sanc.co.za/archive/archive2013/newsc1303.htm [Accessed 06.09.2014]
60. South African Nursing Council. 2014. Competencies for forensic nurses. Available: http://www.sanc.co.za/pdf/Competencies/SANC%20Competencies-Forensic%20Nurse%202014-05.pdf [Accessed 12.02.2015]
61. Naidoo, K. 2013. Rape in South Africa - a call to action. *S Afr Med J*,103(4):210–11.
62. Kim, J., Askew, I., Muvhango, L., *et al.*2009. The refentse model for post-rape care. Population Council. Available: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.175.8585&rep=rep1&type=pdf [Accessed 24.09.2014]

63. Jacobs, T. & Jewkes, R. 2002. Vezimfilho: A model for health sector response to gender violence in South Africa. *Int J Gynecol Obstet*,78(1):51–56.
64. Christofides, N.& Jewkes, R. 2010. Acceptability of universal screening for intimate partner violence in voluntary HIV testing and counseling services in South Africa and service implications. *AIDS Care*,22(3):279–85.
65. Blanchard, K., Harrison, T. & Sello, M. 2005. Pharmacists' knowledge and perceptions of emergency contraceptive pills in Soweto and the Johannesburg Central Business District, South Africa. *Int Fam Plan Perspect*,31(4):172–78.
66. Plüddermann, A., Reuter, H. & Johnson C. 2007. Post-exposure prophylaxis for rape survivors. *S Afr Med J*,97(1):12.
67. Scorgie, F., Nakato, D., Harper, E., *et al.* 2013. "We are despised in the hospitals": Sex workers' experiences of accessing health care in four African countries. *Cult Health Sex*,15(4):450–65.
68. Kim, J. & Motsei, M. 2002. "Women enjoy punishment": Attitudes and experiences of gender-based violence among PHC nurses in rural South Africa. *Soc Sci Med*,54(8):1243–54.
69. Christofides, N.J. & Silo, Z. 2005. How nurses' experiences of domestic violence influence service provision: Study conducted in North-West province, South Africa. *Nurs Health Sci*,7(1):9–14.
70. Yoshihama, M. & Mills, L.G. 2003. When is the personal professional in Public Child Welfare practice? The influence of intimate partner and child abuse histories on workers in domestic violence cases. *Child Abuse Negl*,27(3):319–36.
71. d'Oliveira, A.F., Schraiber, L.B., Hanada, H., *et al.* 2009. Comprehensive health (care) services to women in gender violence situation: an alternative to primary health care. *Ciênc Saúde Coletiva*,14(4):1037–50.
72. Leppäkoski, T. & Paavilainen, E. 2013. Interventions for women exposed to acute intimate partner violence: Emergency professionals' perspective. *J Clin Nurs*,22(15-16):2273–85.
73. Baird, K., Salmon, D. & White, P. 2013. A five year follow-up study of the Bristol pregnancy domestic violence programme to promote routine enquiry. *Midwifery*,29(8):1003–10.
74. Ledray, L.E. 1992. The sexual assault nurse clinician: A fifteen-year experience in Minneapolis. *J Emerg Nurs*,18(3):217–22.

75. Christofides, N., Muirhead, D., Jewkes, R., *et al.* 2006. Women's experiences of and preferences for services after rape in South Africa: Interview study. *BMJ*,332(7535):209–213.
76. Smythe, D. Rape unresolved: Policing sexual offences in South Africa. Cape Town: University of Cape Town Press, 2015.
77. Cox, S., Andrade, G., Lungelow, D., *et al.* 2007. The child rape epidemic : Assessing the incidence at Red Cross Hospital, Cape Town, and establishing the need for a new national protocol. *S Afr Med J*,97(10):950–55.
78. Vetten, L., Jewkes, R., Sigsworth, R., *et al.*2008. Tracking justice: The attrition of rape cases through the criminal justice system in Gauteng. Johannesburg, South Africa: Tshwaranang Legal Advocacy Centre, South African Medical Research Council, Centre for the Study of Violence and Reconciliation. Available: http://www.csvr.org.za/docs/tracking_justice.pdf [Accessed 03.01.2012]
79. Vetten, L. 2014. Rape and other forms of sexual violence in South Africa. *Inst Secur Stud*, 72:1–8.
80. Davies, M. 2002. Child rape. *S Afr Med J*,92(9):664.
81. Du Mont J. & Parnis, D. 2004. The doctor's dilemma: Care giving and medicolegal evidence collection. *Med Law*,23(3):515–529.
82. Sommers, M.S., Fisher, B.S. & Karjane HM. 2005. Using colposcopy in the rape exam: Health care, forensic, and criminal justice issues. *J Forensic Nurs*,1(1):28–35.
83. Goicolea, I., Vives-Cases, C., San Sebastian, M., *et al.* 2013. How do primary health care teams learn to integrate intimate partner violence (IPV) management? A realist evaluation protocol. *Implement Sci*,8:36.
84. Work Health Organization. 2007. Everybody's business–strengthening health systems to improve health outcomes: WHO's framework for action. Geneva, Switzerland: WHO. Available: http://www.who.int/healthsystems/strategy/everybodys_business.pdf [Accessed 31.01.2015]
85. Turner, T., Misso, M., Harris, C., *et al.* 2008. Development of evidence-based clinical practice guidelines (CPGs): Comparing approaches. *Implement Sci*,3:45.
86. Ledray, L.E. & Barry, L. 1998. SANE expert and factual testimony. *J Emerg Nurs*,24(3):284–287.
87. Jewkes, R., Christofides, N., Vetten, L., *et al.* 2009. Medico-legal findings, legal case progression, and outcomes in South African rape cases: Retrospective review. *Public Libr Sci*,6:e1000164. doi: 10.1371/journal.pmed.1000164 [Accessed 03.01.2012]

88. Dartnall, E. & Jewkes, R. 2013. Sexual violence against women: The scope of the problem. *Best Pract Res Clin Obstet Gynaecol*,27(1):3–13.
89. García-Moreno, C., Jansen, H.A., Ellsberg, M., *et al.*2005. WHO multi-country study on women's health and domestic violence against women: initial results on prevalence, health outcomes and women's responses. Geneva: WHO. Available: http://www.who.int/gender/violence/who_multicountry_study/Introduction-Chapter1-Chapter2.pdf [Accessed 07.12.2014]
90. Johnson, H., Ollus, N. & Nevala, Sexual violence against women: An international perspective. New York: Springer Science & Business Media, 2007.
91. Bloomfield, K., Allamani, A., Beck, F., *et al.* 2005. Gender, culture and alcohol problems: A multi-national study. Berlin, Germany: Institute for Medical Informatics, Biometrics & Epidemiology, Charité Universitätsmedizin Berlin. Available: http://www.who.int/substance_abuse/activities/genacis/en/ [Accessed 04.04.2015]
92. FRA – European Union Agency for Fundamental Rights. 2014. Violence against women: An EU-wide survey - Main results. Belgium: FRA – European Union Agency for Fundamental Rights. Available: http://fra.europa.eu/sites/default/files/fra-2014-vaw-survey-main-results-apr14_en.pdf [Accessed 06.04.2015]
93. Jewkes, R., Fulu, E., Roselli, T., *et al.* 2013. Prevalence of and factors associated with non-partner rape perpetration: Findings from the UN multi-country cross-sectional study on men and violence in Asia and the Pacific. *Lancet Glob Health*,1(4):208–18.
94. Abrahams, N., Devries, K., Watts, C., *et al.* 2014. Worldwide prevalence of non-partner sexual violence: A systematic review. *Lancet*,383(9929):1648–54.
95. Devries, K.M., Mak, J.Y., García-Moreno, C., *et al.* 2013. Global Health. The global prevalence of intimate partner violence against women. *Science*,340(6140):1527–28.
96. Fulu, E., Warner, X., Miedema, S., *et al.* 2013. Why do some men use violence against women and how can we prevent it: Quantitative findings from the United Nations multi-country study on men and violence in Asia and the Pacific. Bangkok: UNDP, UNFPA, UN Women, UNV.. Available: http://countryoffice.unfpa.org/timor-leste/drive/p4p-report.pdf [Accessed 06.04.2015]
97. Decker, M.R., Latimore, A.D., Yasutake, S., *et al.* 2015. Gender-based violence against adolescent and young adult women in Low-and Middle-Income Countries. *J Adolesc Health*,56(2):188–96.

98. Sumner, S.A., Mercy, A.A., Saul, J., *et al.* 2015. Prevalence of sexual violence against children and use of social services - seven countries, 2007-2013. *MMWR Morb Mortal Wkly Rep*,64(21):565–69.

99. Bott, S., Guedes, A., Goodwin, M., *et al.* 2012. Violence against women in Latin America and the Caribbean: A comparative analysis of population-based data from 12 countries. Washington, DC: Pan American Health Organization. Available: http://www.paho.org/hq/index.php?option=com_content&view=article&id=8175:violence-against-women-latin-america-caribbean-comparative-analysis-population-data-from-12-countries&Itemid=1519&lang=en [Accessed 06.04.2015]

100. Naved, R.T., Huque, H., Farah, S., *et al.* 2011. Men's attitudes and practices regarding gender and violence against women in Bangladesh: Preliminary findings. Bangladesh: International Centre for Diarrhoeal Disease Research, Bangladesh. Available: http://www.partners4prevention.org/sites/default/files/resources/final_report_bangladesh.pdf [Accessed 06.04.2015]

101. United Nations Children's Fund, & Centers for Disease Control. 2011. Violence against children in Tanzania: Findings from a national survey 2009. Dar es Salam: United Nations Children's Fund, US Centers for Disease Control and Prevention, Muhimbili University of Health and Allied Sciences. Available: http://www.unicef.org/media/files/VIOLENCE_AGAINST_CHILDREN_IN_TANZANIA_REPORT.pdf [Accessed 06.04.2015]

102. Reza, A., Breiding, M., Blanton, C., *et al.* 2007. Violence against children in Swaziland: Findings from a national survey on violence against children in Swaziland. Swaziland: UNICEF Swaziland & Centers for Disease Control & Prevention. Available: http://www.unicef.org/swaziland/sz_publications_2007violenceagainstchildren.pdf [Accessed 06.04.2015]

103. Schmid, C. 2012. Sexual assault on children and adolescents in Switzerland: Forms, extent and circumstances. Zurich, Switzerland: UBS Optimus Foundation. Available: http://www.childrenssafetynetwork.org/news/sexual-assault-children-and-adolescents-switzerland-optimus-study?page=14 [Accessed 06.04.2015]

104. Felitti, V.J., Anda, R.F., Nordenberg, D., *et al.* 1998. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *Am J Prev Med*,14(4):245–58.

105. Barker, G., Contreras, J.M., Heilman, B., *et al.* 2011. Evolving men: Initial results from the International Men and Gender Equality Survey (IMAGES). Washington, DC: International Center for Research on Women (ICRW) and Rio de Janeiro: Instituto Promundo. Available: http://www.unicef.org/rwanda/events_9319.html [Accessed 07.12.2014]
106. SAPS Strategic Management. 2014. An analysis of the national crime statistics: Addendum to the Annual Report 2013/14. Pretoria, South Africa: SAPS. Available: http://www.saps.gov.za/about/stratframework/annual_report/2013_2014/crime_statreport_2014_part1.pdf [Accessed 07.04.2015]
107. SAPS Strategic Management. 2012. An analysis of the national crime statistics: Addendum to the Annual Report 2011/2012. Pretoria, South Africa: SAPS. Available: http://www.saps.gov.za/about/stratframework/annual_report/2011_2012/saps_crime_stats_report_%202011-12.pdf [Accessed 13.09.2014]
108. South African Police Service. 2009. Crime statistics 2008/2009. Available: http://www.saps.gov.za/statistics/reports/crimestats/2009/categories.htm. [Accessed 03.01.2012].
109. Jewkes, R. & Abrahams, N. 2002. The epidemiology of rape and sexual coercion in South Africa: An overview. *Soc Sci Med*,55(7):1231–44.
110. Machisa, M., Jewkes, R., Lowe Morna, C., *et al.* 2011. The war at home: Gender based violence indicators project, Gauteng research report. Johannesburg, South Africa: Medical Research Council & Genderlinks. Available: http://www.genderlinks.org.za/article/the-war-at-home---gbv-indicators-project-2011-08-16 [Accessed 03.12.2014]
111. Jewkes, R., Penn-Kekana, L., Levin, J., *et al.* 1999. He must give me money, he mustn't beat me: Violence against women in three South African Provinces. Pretoria, South Africa: CERSA (Women's Health), Medical Research Council. Available: http://www.mrc.ac.za/gender/violence.pdf [Accessed 03.12.2014]
112. Andersson, N., Mhatre, S., Mqotsi, N., *et al.* 1998. Prevention of sexual violence a social audit of the role of the police in the jurisdiction of Johannesburg's Southern Metropolitan Local Council. Johannesburg, South Africa: CIETAfrica/SMLC. Available: http://www.ciet.org/en/library-document/south-africa-pub-how-to-police-sexual-violence-by-n-andersson-et-al-crime-and-conflict-autumn-1999/ [Accessed 07.12.2014]

113. Jewkes, R., Sikweyiya, Y., Morrell, R., *et al.* 2010. Why, when and how men rape. Understanding rape perpetration in South Africa. *SA Crime Q*,34:23–31.
114. Jewkes, R., Dunkle, K., Koss, M.P., *et al.* 2006. Rape perpetration by young, rural South African men: Prevalence, patterns and risk factors. *Soc Sci Med*,63(11):2949–61.
115. SAPS Strategic Management. 2008. South African Police Service annual report 2007/2008. Pretoria, South Africa: SAPS. Available: http://www.gov.za/documents/south-african-police-service-annual-report-20072008 [Accessed 17.05.2015]
116. Crime Information Analysis Centre (CIAC). 2005. South African police service crime statistics. Pretoria, South Africa: SAPS.
117. Wells, H. & Polders, L. 2006. Anti-gay hate crimes in South Africa: Prevalence, reporting practices, and experiences of the police. *Agenda*,20(67):20–28.
118. Sandfort, T.G., Baumann, L.R., Matebeni, Z., *et al.* 2013. Forced sexual experiences as risk factor for self-reported HIV infection among Southern African lesbian and bisexual eomen. *PloS One*,8(1):e53552.
119. Jewkes, R., Sikweyiya, Y., Morrell, R., *et al.* 2009. Understanding men's health and the use of violence: interface of rape and HIV in South Africa. Pretoria, Africa South: Gender and Health Research Unit, Medical Research Council. Available: http://www.mrc.ac.za/gender/interfaceofrape&hivsarpt.pdf [Accessed 03.01.2012]
120. Jewkes, R., Vetten, L., Jina, R., *et al.* 2012. What we know - and what we don't. Single and multiple perpetrator rape in South Africa. *SA Crime Q*,41:11–19.
121. Abrahams, N., Martin, L., Jewkes, R., *et al.* 2008. The epidemiology and the pathology of suspected rape homicide in South Africa. *Forensic Sci Int*,178(2-3):132–38.
122. Hemenway, D., Shinoda-Tagawa, T., Miller, M. 2002. Firearm availability and female homicide victimization rates among 25 populous high-income countries. *J Am Med Womens Assoc*,57(2):100–104.
123. Lemard, G. & Hemenway, D. 2006. Violence in Jamaica: An analysis of homicides 1998-2002. *Inj Prev J Int Soc Child Adolesc Inj Prev*,12(1):15–18.
124. Mathews, S., Abrahams, N., Jewkes, R., *et al.* 2013. The epidemiology of child homicides in South Africa. *Bull World Health Organ*,91(8):562–68.
125. Jewkes, R. Rape perpetration: a review. 2012. Pretoria, South Africa: Sexual Violence Research Initiative. Available: http://www.svri.org/RapePerpetration.pdf [Accessed 12.04.2015]

126. Dunkle, K.L., Jewkes, R.K., Brown, H.C., *et al.* 2004. Prevalence and patterns of gender-based violence and revictimization among women attending antenatal clinics in Soweto, South Africa. *Am J Epidemiol*,160(3):230–39.
127. Penning, S.L., Collings, S.J. 2014. Perpetration, revictimization, and self-injury: Traumatic reenactments of child sexual abuse in a nonclinical sample of South African adolescents. *J Child Sex Abuse*,23(6):708–26.
128. Wood, K. 2005. Contextualizing group rape in post-apartheid South Africa. *Cult Health Sex*,7(4):303–17.
129. Jewkes, R.& Sikweyiya, Y.Streamlining understanding gang rape in South Africa. Ch. 7. *In:* Handbook on the study of multiple perpetrator rape: A multidisciplinary response to an international problem, ed. by Horvath, M.A. & Wood, J. London: Routledge,2013, pp.116–31.
130. Jewkes, R., Sikweyiya, Y., Morrell, R., *et al.* 2011. Gender inequitable masculinity and sexual entitlement in rape perpetration South Africa: Findings of a cross-sectional study. *PLoS ONE*,6(12):e29590.
131. World Health Organization & Sexual Violence Research Initiative.2007. Rape: How women, the community and the health sector respond. Geneva, Switzerland: WHO. Available: http://www.svri.org/rape.pdf [Accessed 18.04.2012]
132. Jina, R. & Thomas, L.S. 2013. Health consequences of sexual violence against women. *Best Pract Res Clin Obstet Gynaecol*,27(1):15–26.
133. Foa, E.B. & Riggs, D.S. Posttraumatic stress disorder and rape. Ch. 11. *In:* Review of psychiatry, ed. by Oldham, J.M. & Riba, M.B. American Psychiatric Pub, 1993, pp.273–303.
134. Creamer, M.C., Burgess, P. & McFarlane, A.C. 2001. Post-traumatic stress disorder: Findings from the Australian national survey of mental health and well-being. *Psychol Med*,31(7):1237–47.
135. Kessler, R.C., Sonnega, A., Bromet, E., *et al.* 1995. Posttraumatic stress disorder in the national comorbidity survey. *Arch Gen Psychiatry*,52(12):1048.
136. Jina, R., Jewkes, R., Christofides, N., *et al.* 2008. Caring for survivors of sexual assault: A training programme for health care providers in South Africa. Participant's Manual. Pretoria, South Africa: National Department of Health.
137. Jewkes, R.K., Dunkle, K., Nduna, M., *et al.* 2010. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: A cohort study. *Lancet*,376(9734):41–48.

138. Brener, N.D., McMahon, P.M., Warren, C.W., *et al.* 1999. Forced sexual intercourse and associated health-risk behaviors among female college students in the United States. *J Consult Clin Psychol*,67(2):252.
139. Basile, K.C., Black, M.C., Simon, T.R., *et al.* 2006. The association between self-reported lifetime history of forced sexual intercourse and recent health-risk behaviors: Findings from the 2003 national youth risk behavior survey. *J Adolesc Health*,39(5):752.1–7.
140. Campbell, R., Sefl, T. & Ahrens, C.E. 2004. The impact of rape on women's sexual health risk behaviors. *Health Psychol*,23(1):67.
141. Salam, M.A., Alim, M.A. & Noguchi, T. 2006. Spousal abuse against women and its consequences on reproductive health: A study in the urban slums in Bangladesh. *Matern Child Health J*,10(1):83–94.
142. Dunkle, K.L., Jewkes, R.K., Nduna, M., *et al.* 2006. Perpetration of partner violence and HIV risk behaviour among young men in the rural Eastern Cape, South Africa. *Aids*,20(16):2107.
143. Eby, K.K., Campbell, J.C., Sullivan, C.M., *et al.* 1995. Health effects of experiences of sexual violence for eomen with abusive partners. *Health Care Women Int*,16(6):563–76.
144. Resnick, H.S., Acierno, R. & Kilpatrick, D.G. 1997. Health impact of interpersonal violence 2: Medical and mental health outcomes. *Behav Med*,23(2):65–78.
145. Campbell, J.C, Baty, M.L., Ghandour, R.M., *et al.* 2008. The intersection of intimate partner violence against women and HIV/AIDS: A review. *Int J Inj Contr Saf Promot*,15(4):221–31.
146. Astbury, J. 2006. Services for victim/survivors of sexual assault: Identifying needs, interventions and provision of services in Australia. *ACSSA Issues*,6:1–26.
147. Golding, J.M. 1994. Sexual assault history and physical health in randomly selected Los Angeles women. *Health Psychol*,13(2):130.
148. Leserman, J. 2005. Sexual abuse history: Prevalence, health effects, mediators, and psychological treatment. *Psychosom Med*,67(6):906–15.
149. Golding, J.M. 1999. Sexual-assault history and long-term physical health problems evidence from clinical and population epidemiology. *Curr Dir Psychol Sci*,8(6):191–94.
150. Campbell, J.C. & Soeken, K.L. 1999. Forced sex and intimate partner violence. *Violence Women*,5(9):1017–35.

151. Golding, J.M. 1996. Sexual assault history and women's reproductive and sexual health. *Psychol Women Q*,20(1):101–21.
152. Martin, S.L., Kilgallen, B., Tsui, A.O., *et al.* 1999. Sexual behaviors and reproductive health outcomes. *JAMA*,282(20):1967–72.
153. Campbell, R. 2001. Mental health services for rape survivors. Available: http://www.mincava.umn.edu/documents/commissioned/campbell/campbell.html. [Accessed 24.06.2011].
154. Resick, P.A. 1993. The psychological impact of rape. *J Interpers Violence*,8(2):223–55.
155. Resnick, H.S., Kilpatrick, D.G., Dansky, B.S., *et al.* 1993. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *J Consult Clin Psychol*,61(6):984.
156. Kimerling, R & Calhoun, K.S. 1994. Somatic symptoms, social support, and treatment seeking among sexual assault victims. *J Consult Clin Psychol*,62(2):333.
157. Davidson, J.R., Hughes, D.C., George, L.K., *et al.* 1996. The association of sexual assault and attempted suicide within the community. *Arch Gen Psychiatry*,53(6):550.
158. Wiederman, M.W., Sansone, R.A. & Sansone, L.A. 1998. History of trauma and attempted suicide among women in a primary care setting. *Violence Vict*,13(1):3.
159. Ullman, S.E. & Brecklin, L.R. 2002. Sexual assault history and suicidal behavior in a national sample of women. *Suicide Life Threat Behav*,32(2):117–30.
160. Golding, J.M., Stein, J.A., Siegel, J.M., *et al.* 1988. Sexual assault history and use of health and mental health services. *Am J Community Psychol*,16(5):625–44.
161. Golding, J.M., Cooper, M.L., George, L.K. 1997. Sexual assault history and health perceptions: seven general population studies. *Health Psychol*,16(5):417.
162. World Health Organization. 2013. Responding to intimate partner violence and sexual violence against women: WHO clinical and policy guidelines. Geneva, Switzerland: WHO. Available: http://apps.who.int/iris/bitstream/10665/85240/1/9789241548595_eng.pdf [Accessed 18.11.2014]
163. Du Mont, J., Miller, K-L. & Myhr, T.L. 2003. The role of "real rape" and "real victim" stereotypes in the police reporting practices of sexually assaulted women. *Violence Women*,9(4):466–86.
164. Bachman, R. 1993. Predicting the reporting of rape victimizations have rape reforms made a difference? *Crim Justice Behav*,20(3):254–70.

165. Karjane, H.K., Fisher, B.S. & Cullen, F.T. 2002. Campus sexual assault: How America's institutions of higher education respond. Newton, Australia: Education Development Center.
Available: https://www.ncjrs.gov/pdffiles1/nij/grants/196676.pdf [Accessed 16.12.2014]
166. Fisher, B.S., Kaplan, A., Budescu, M., *et al.* 2013. The influence of anogenital injury on women's willingness to engage with the criminal justice process after rape. *Violence Vict*,28(6):968–83.
167. Du Mont,J. & White, D. 2002. The uses and impacts of medico-legal evidence in sexual assault cases: a global review. Geneva, Switzerland: WHO. Available: http://www.svri.org/medico.pdf [Accessed 10.02.2014]
168. Schei, B., Muus, K.M. & Moen, M.H. 1995. Medical and legal aspects of rape. Referrals to a team for care of rape victims at the regional hospital in Trondheim during the period 1989-1992. *Tidsskr Den Nor Lægeforen*,115(1):30–33.
169. Houmes, B.V., Fagan, M.M., Quintana, N.M. 2003. Establishing a Sexual Assault Nurse Examiner (SANE) program in the emergency department. *J Emerg Med*,25(1):111–21.
170. McKimmie, B.M., Masser, B.M. & Bongiorno, R. 2014. What counts as rape? The effect of offense prototypes, victim stereotypes, and participant gender on how the complainant and defendant are perceived. *J Interpers Violence*,29(12):2273–2303.
171. Venema, R.M. 2014. Police officer schema of sexual assault reports real rape, ambiguous cases, and false reports. *J Interpers Violence*, pii: 0886260514556765.
172. Anderson, S., McClain, N. & Riviello, R.J. 2006. Genital findings of women after consensual and nonconsensual intercourse. *J Forensic Nurs*,2(2):59–65.
173. Anderson, S.L., Parker, B.J., & Bourguignon, C.M. 2009. Predictors of genital injury after nonconsensual intercourse. *Adv Emerg Nurs J*,31(3):236–47.
174. Lincoln, C., Perera, R., Jacobs, I., *et al.* 2013. Macroscopically detected female genital injury after consensual and non-consensual vaginal penetration: A prospective comparison study. *J Forensic Leg Med*,20(7):884–901.
175. McLean, I., Roberts, SA., White, C., *et al.* 2011. Female genital injuries resulting from consensual and non-consensual vaginal intercourse. *Forensic Sci Int*,204(1):27–33.
176. Astrup, B.S., Ravn, P., Thomsen, J.L., *et al.* 2013. Patterned genital injury in cases of rape–s case–control study. *J Forensic Leg Med*,20(5):525–29.

177. Larkin, H.J., Cosby, C.D., Kelly, D., *et al.* 2012. A pilot study to test the differential validity of a genital injury severity scale, in development for use in forensic sexual assault examinations. *J Forensic Nurs*,8(1):30–38.
178. Bays, J. & Lewman, L.V. 1992. Toluidine blue in the detection at autopsy of perineal and anal lacerations in victims of sexual abuse. *Arch Pathol Lab Med*,116(6):620–21.
179. Silverman, Jr. S., Migliorati, C. & Barbosa, J. 1984. Toluidine blue staining in the detection of oral precancerous and malignant lesions. *Oral Surg Med Pathol*,57(4):379–82.
180. McCauley, J., Guzinski, G., Welch, R., *et al.* 1987. Toluidine blue in the corroboration of rape in the adult victim. *Am J Emerg Med*,5(2):105–8.
181. United States Department of Justice. 2004. A national protocol for sexual assault medical forensic examinations: Adults/adolescents. Washington, DC: Office on Violence against Women. Available: https://www.ncjrs.gov/pdffiles1/ovw/241903.pdf [Accessed 15.12.2014]
182. Hochmeister, M.N., Whelan, M., Borer, U.V., *et al.* 1997. Effects of toluidine blue and destaining reagents used in sexual assault examinations on the ability to obtain DNA profiles from postcoital vaginal swabs. *J Forensic Sci*,42(2):316–19.
183. Brennan, P.A. 2006. The medical and ethical aspects of photography in the sexual assault examination: Why does it offend? *J Clin Forensic Med*,13(4):194–202.
184. Lauber, A.A. & Souma, M.L. 1982. Use of toluidine blue for documentation of traumatic intercourse. *Obstet Gynecol*,60(5):644–48.
185. Slaughter, L., Brown, C, Crowley S, *et al.* 1997. Patterns of genital injury in female sexual assault victims. *Am J Obstet Gynecol*,176(3):609–16.
186. Fraser, I.S., Lähteenmäki, P., Elomaa, K., *et al.* 1999. Variations in vaginal epithelial surface appearance determined by colposcopic inspection in healthy, sexually active women. *Hum Reprod.*,14(8):1974–78.
187. Astrup, B.S., Lauritsen, J., Thomsen, J.L., *et al.* 2013. Colposcopic photography of genital injury following sexual intercourse in adults. *Forensic Sci Med Pathol.,* 9(1):24–30.
188. O'Brien, C. 1997. Improved forensic documentation of genital injuries with colposcopy. *J Emerg Nurs.,* 23(5):460–62.
189. Lenahan, L.C., Ernst, A. & Johnson, B. 1998. Colposcopy in evaluation of the adult sexual assault victim. *Am J Emerg Med.,* 16(2):183–84.

190. Rogers, A.J., McIntyre, S.L., Rossman, L., *et al.* 2008. The forensic rape examination: Is colposcopy really necessary? *Ann Emerg Med*, 52(4):63.
191. White, C. 2013. Genital injuries in adults. *Best Pract Res Clin Obstet Gynaecol.*, 27(1):113–30.
192. Patel, H. & Courtney, G. 1993. Colposcopy and rape. *Am J Obstet Gynecol.*, 168(4):1334–35.
193. Sommers, M.S.. 2007. Defining patterns of genital injury from sexual assault a review. *Trauma Violence Abuse*,8(3):270–80.
194. Kennedy, K.M. 2015. Strategic categorization of available research relating to sexual assault and rape facilitates more accurate interpretation of injury data. *Am J Forensic Med Pathol.*,36(1):31–35.
195. van As, A.B., Withers, M., du Toit, N., *et al.* 2001. Child rape - patterns of injury, management and outcome. *S Afr Med J.*,91(12):1035–38.
196. Westcott, D.L. 1984. Sexual abuse of children. A hospital-based study. *S Afr Med J.*,65(22):895–97.
197. Jaffe, A.M. & Roux, P. 1988. Sexual abuse of children--a hospital-based study. *S Afr Med J.*,74(2):65–67.
198. Kotik, A., Zaitsev, K., Shperber, A., *et al.* 2011. The prevalence of physical evidence in the anogenital area in sexual assault cases of children in Israel. *Harefuah*,150(12):895–98..
199. Campbell, R., Patterson, D., Dworkin, E., *et al.* 2010. Anogenital injuries in childhood sexual abuse victims treated in a pediatric forensic nurse examiner (FNE) program. *J Forensic Nurs.*,6(4):188–95.
200. Goodyear-Smith, F.A. 1989. Medical evaluation of sexual assault findings in the Auckland Region. *N Z Med J.*,102(876):493–95.
201. Adams, J.A., Harper, K., Knudson, S., *et al.* 1994. Examination findings in legally confirmed child sexual abuse: It's normal to be normal. *Pediatrics*,94(3):310–17.
202. Goyal, M.K., Mollen, C.J., Hayes, K.L., *et al.* 2013. Enhancing the emergency department approach to pediatric sexual assault care: Implementation of a pediatric sexual assault response team program. *Pediatr Emerg Care*,29(9):969–73.
203. Jones, L.W. & Bass, D.H. 1991. Perineal injuries in children. *Br J Surg.*,78(9):1105–7.
204. Adams, J.A., Girardin, B., Faugno, D. 2001. Adolescent sexual assault: Documentation of acute injuries using photo- colposcopy. *J Pediatr Adolesc Gynecol.*,14(4):175–80.

205. Adams, J., Girardin, B., Faugno, D. 2000. Signs of genital trauma in adolescent rape victims examined acutely. *J Pediatr Adolesc Gynecol.*,13(2):88.
206. Jones, J.S., Rossman, L., Wynn, B.N., *et al.* 2003. Comparative analysis of adult versus adolescent sexual assault: Epidemiology and patterns of anogenital injury. *Acad Emerg Med.*,10(8):872–77.
207. Baker, R.B. & Sommers, M.S. 2008. Relationship of genital injuries and age in adolescent and young adult rape survivors. *J Obstet Gynecol Neonatal Nurs.*,37(3):282–89.
208. Baker, R.B., Fargo, J.D., Shambley-Ebron, D., *et al.* 2010. A source of healthcare disparity: Race, skin color, and injuries after rape among adolescents and young adults. *J Forensic Nurs.*,6(3):144–50.
209. Muram, D., Miller, K. & Cutler, A. 1992. Sexual assault of the elderly victim. *J Interpers Violence*,7(1):70–76.
210. Jones, J.S., Rossman, L., Diegel, R., *et al.* 2009. Sexual assault in postmenopausal women: Epidemiology and patterns of genital injury. *Am J Emerg Med.*,27(8):922–29.
211. Morgan, L., Dill, A., Welch, J. 2011. Sexual assault of postmenopausal women: A retrospective review. *Br Int J Obstet Gynaecol.*,118(7):832–43.
212. Ramin, S.M., Satin, A.J., Stone, I.C., *et al.* 1992. Sexual assault in postmenopausal women. *Obstet Gynecol.*,80(5):860–64.
213. Sommers, M.S., Zink, T., Baker, R.B., *et al.* 2006. The effects of age and ethnicity on physical injury from rape. *J Obstet Gynecol Neonatal Nur.s*,35(2):199–207.
214. Gray-Eurom, K., Seaberg & D.C., Wears, R.L. 2002. The prosecution of sexual assault cases: Correlation with forensic evidence. *Ann Emerg Med.*,39(1):39–46.
215. Larsen, M., Hilden, M. & Lidegaard, O. 2014. Sexual assault: A descriptive study of 2500 female victims over a 10-Year period. *Br Int J Obstet Gynaecol.*, 112(4): 577-84.
216. Biggs, M., Stermac, L. & Divinsky, M. 1998. Genital injuries following sexual assault of women with and without prior sexual intercourse experience. *Can Med Assoc J.*,159(1):33.
217. Tintinalli, J.E. & Hoelzer, M. 1985. Clinical findings and legal resolution in sexual assault. *Ann Emerg Med.*,14(5):447–53.
218. Crane, P.A. 2006. Predictors of injury associated with rape. *J Forensic Nurs.*,2(2):75–83.
219. Crane, P. 2005. Predictors of injury associated with rape. PhD thesis. University of Pittsburgh.

220. Bowyer, L. & Dalton, M. 1997. Female victims of rape and their genital injuries. *Br Int J Obstet Gynaecol.*,104:617–20.
221. Adams, J.A. & Knudson, S. 1996. Genital findings in adolescent girls referred for suspected sexual abuse. *Arch Pediatr Adolesc Med.*,150(8):850–57.
222. Drocton, P., Sachs, C., Chu, L., *et al.* 2008. Validation set correlates of anogenital injury after sexual assault. *J Soc Acad Emerg Med.*,15(3):231–38.
223. Hilden, M., Schei, B. & Sidenius, K. 2005. Genitoanal injury in adult female victims of sexual assault. *Forensic Sci Int.*,154(2-3):200–205.
224. Jones, J., Wynn, B., Kroeze, B., *et al.* 2004. Comparison of sexual assaults by strangers versus known assailants in a community-based population. *Am J Emerg Med.*,22(6):454–59.
225. Jones, J.S., Alexander, C., Wynn, B.N., *et al.* 2009. Why women don't report sexual assault to the police: The influence of psychosocial variables and traumatic injury. *J Emerg Med.*,36(4):417–24.
226. Maguire, W., Goodall, E. & Moore T. 2009. Injury in adult female sexual assault complainants and related factors. *Eur J Obstet Gynecol Reprod Biol.*,142(2):149–53.
227. Palmer, C., McNulty, A., D'Este, C., *et al.* 2004. Genital injuries in women reporting sexual assault. *Sex Health*,1(1):55–59.
228. Eckert, L.O., Sugar, N. & Fine, D. 2004. Factors impacting injury documentation after sexual assault: Role of examiner experience and gender. *Am J Obstet Gynecol.*,190(6):1739–46.
229. Sugar, N., Fine, D. & Eckert, L. 2004. Physical injury after sexual assault: Findings of a large case series. *Am J Obstet Gynecol.*,190:71–76.
230. Hagemann, C.T., Stene, L.E., Myhre, A.K., *et al.* 2011. Impact of medico-legal findings on charge filing in cases of rape in adult women. *Acta Obste. Gynecol Scand.*,90(11):1218–24.
231. Rambow, B., Adkinson, C., Frost, T.H., *et al.* 1992. Female sexual assault: Medical and legal implications. *Ann Emerg Med.*,21(6):727–31.
232. Cameron, D.A. 1983. Rape-a survey of victims presenting at a district hospital. *S Afr Med J.*,64(7):245–48.
233. Grossin, C., Sibille, I., Lorin de la Grandmaison, G., *et al.* 2003. Analysis of 418 cases of sexual assault. *Forensic Sci Int.*,131(2-3):125–30.
234. Riggs, N., Houry, D., Long, G., *et al.* 2000. Analysis of 1,076 cases of sexual assault. *Ann Emerg Med.*,35(4):358–62.

235. Everett, R.B. & Jimerson, G.K. 1977. The rape victim: A review of 117 consecutive cases. *Obstet Gynecol.*,50(1):88–90.
236. Hwa, H.L., Chen, S.C., Wu, M.Z., *et al.* 2010. Analysis of sases of sexual assault presenting at a medical center in taipei. *Taiwan J Obstet Gynecol.*,49(2):165–69.
237. Teixeira, W.R. 1981. Hymenal colposcopic examination in sexual Offenses. *Am J Forensic Med Pathol.*,2(3):209–15.
238. Lammers, K., Martin, L., Andrews, D., *et al.* 2010. Reported rapes at a hospital rape centre: demographic and clinical profiles. *S Afr Med J.*,100:362.
239. Satin, A.J., Hemsell, D.L., Stone, I.C., *et al.* 1991. Sexual assault in pregnancy. *Obstet Gynecol.*,77(5):710–14.
240. Killian, S., Suliman, S., Fakier, N., *et al.* 2007. Rape survivors and the provision of HIV Post-Exposure Prophylaxis. *S Afr Med J.*,97(8):585–86.
241. Jones, J.S., Rossman, L., Wynn, B.N., *et al.* 2010. Assailants' sexual dysfunction during rape: Prevalence and relationship to genital trauma in female victims. *J Emerg Med.*,38(4):529–35.
242. Möller, A.S., Bäckström, T., Söndergaard, H.P., *et al.* 2012. Patterns of injury and reported violence depending on relationship to assailant in female Swedish sexual assault victims. *J Interpers Violence*,27(16):3131–48.
243. McGregor, M.J., Du Mont, J. & Myhr, T.L. 2002. Sexual assault forensic medical examination: Is evidence related to successful prosecution? *Ann Emerg Med.*,39(6):639–47.
244. Beh, P.S. 1998. Rape in Hong Kong: An overview of current knowledge. *J Clin Forensic Med.*,5(3):124–28.
245. Cartwright, P. 1987. Factors that correlate with injury sustained by survivors of sexual assault. *Obstet Gynecol.*,70:44.
246. Olusanya, O., Ogbemi, S., Unuigbe, J., *et al.* 1986. The pattern of rape in Benin City, Nigeria. *Trop Geogr Med.*,38(3):215–20.
247. Sachs, C. & Chu, L. 2002. Predictors of genitorectal injury in female victims of suspected sexual assault. *Acad Emerg Med.*,9(2):146–51.
248. Slaughter, L. & Brown, C.R. 1992. Colposcopy to establish physical findings in rape victims. *Am J Obstet Gynecol.*,166(1):83–86.
249. Sturgiss, E.A., Tyson, A. & Parekh, V. 2010. Characteristics of sexual assaults in which adult victims report penetration by a foreign object. *J Forensic Leg Med.*,17(3):140–42.

250. Martin, L.J. 1999. Violence against women: An analysis of the epidemiology and patterns of injury in rape homicide in Cape Town and in rape in Johannesburg. MMed thesis. University of Cape Town.
251. Stears, S., Rossman, L., Wynn, B., *et al.* 2008. Anogenital injury in adolescent sexual assault: Analysis of 1,024 cases using colposcopy and nuclear staining. *Ann Emerg Med.*,52(4):64.
252. White, C. & McLean, I. 2006. Adolescent complainants of sexual assault; Injury patterns in virgin and non-virgin groups. *J Clin Forensic Med.*,13(4):172–80.
253. Champion, H.L., Foley, K.L., Durant, R.H., *et al.* 2004. Adolescent sexual victimization, use of alcohol and other substances, and other health risk behaviors. *J Adolesc Health*,35(4):321–28.
254. Klot, J.F., Auerbach, J.D., Veronese, F., *et al.* 2012. Greentree white paper: Sexual violence, genitoanal injury, and HIV: Priorities for research, policy, and practice. *AIDS Res Hum Retroviruses*,28(11):1379–88.
255. Sommers, M.S., Brown, K.M., Buschur, C., *et al.* 2012. Injuries from intimate partner and sexual violence: Significance and classification systems. *J Forensic Leg Med.*,19(5):250–63.
256. Meunier-Sham, J., Cross, T.P. & Zuniga, L. 2013. The seven pillars of quality care in a statewide pediatric sexual assault nurse examiner program. *J Child Sex Abuse*,22(7):777–95.
257. Ladson, S., Johnson, C.F. & Doty, R.E. 1987. Do physicians recognize sexual abuse? *Am J Dis Child. 1960*,141(4):411–15.
258. Lentsch, K.A. & Johnson, C.F. 2000. Do physicians have adequate knowledge of child sexual abuse? The results of two surveys of practicing physicians, 1986 and 1996. *Child Maltreat.*,5(1):72–78.
259. Hornor, G. & McCleery, J. 2000. Do pediatric nurse practitioners recognize sexual abuse? *J Pediatr Health Care*,14(2):45–49.
260. Paradise, J.E., Winter, M.R., Finkel, M.A., *et al.* 1999. Influence of the history on physicians' interpretations of girls' genital findings. *Pediatrics*,103(5):980–86.
261. Adams, J.A., Starling, S.P., Frasier, L.D., *et al.* 2012. Diagnostic accuracy in child sexual abuse medical evaluation: Role of experience, training, and expert case review. *Child Abuse Negl.*,36(5):383–92.

262. Colombini, M., Mayhew, S. & Watts, C. 2008. Health-sector responses to intimate partner violence in low- and middle-income settings: A review of current models, challenges and opportunities. *Bull World Health Organ.*,86(8):635–42.
263. Guedes, A.C., Stevens, L., Helzner, J.F., *et al*. Addressing gender violence in a reproductive and sexual health program in Venezuela. *In*: Responding to Cairo. Case studies of changing practice in reproductive health and family planning, ed. by Haberland, N. & Measham, D. Population Council, 2002, pp.257–73.
264. Guedes, A. 2004. Addressing gender-based violence from the reproductive health/HIV sector: A literature review and analysis. Washington, DC: The Population Technical Assistance Project. Available: http://www.prb.org/pdf04/addressGendrBasedViolence.pdf [Accessed 09.01.2015]
265. UNFPA. 2010. Health sector response to gender-based violence: An assessment of the Asia Pacific Region. Bangkok: UNFPA Asia and the Pacific Regional Office. Available: http://asiapacific.unfpa.org/public/pid/6770 [Accessed 09.01.2015]
266. Keesbury, J. & Askew, I. 2010. Comprehensive responses to gender based violence in low-resource settings: Lessons learned from implementation. Lusaka: Population Council. Available: http://www.svri.org/SGBVPolicyBriefPhase1.pdf [Accessed 09.01.2015]
267. McNaughton Reyes, H., Billings, D., Paredes-Gaitan, Y., *et al.* 2012. An assessment of health sector guidelines and services for treatment of sexual violence in El Salvador, Guatemala, Honduras and Nicaragua. *Reprod Health Matters*,20(40):83–93.
268. Agustí, C., Sabidó, M., Guzmán, K., *et al.* 2012. Comprehensive care program for sexual violence victims in Escuintla, Guatemala. *Gac Sanit.*,26(4):376–78.
269. Kilonzo, N. 2009. Delivering post-rape care services: Kenya's experience in developing integrated services. *Bull World Health Organ.*,87(7):555–59.
270. Schraiber, L.B. & d'Oliveira A.. 2002. Violence against women and Brazilian health care policies: A proposal for integrated care in primary care services. *Int J Gynecol Obstet.*,78(1):21–25.
271. Haque, Y. & Clarke, J. 2002. The woman friendly hospital initiative in Bangladesh setting: Standards for the care of women subject to violence. *Int J Gynecol Obstet.*,78(1):45–49.
272. Joyner, K. & Mash, R. 2012. Recognizing intimate partner violence in primary care: Western Cape, South Africa. *PloS One*,7(1):e29540.

273. Joyner, K. & Mash, B. 2014. Quality of care for intimate partner violence in South African primary care: A qualitative study. *Violence Vict.*,29(4):652–69.
274. Joyner, K. & Mash, R.J. 2011. The value of intervening for intimate partner violence in South African primary care: Project evaluation. *BMJ Open*,1(2):e000254.
275. Colombini, M., Ali, S.H., Watts, C., *et al.* 2011. One Stop Crisis Centres: A policy analysis of the Malaysian response to intimate partner violence. *Health Res Policy Syst BioMed Cent.*,9:25.
276. Colombini, M., Mayhew, S.H., Ali, S.H., *et al.* 2012. An integrated health sector response to violence against women in Malaysia: Lessons for supporting scale up. *BMC Public Health*,12:548.
277. Grisurapong, S. 2002. Establishing a One-Stop Crisis Center for women suffering violence in Khonkaen hospital, Thailand *Int J Gynecol Obstet.*,78(1):27–38.
278. Bairagi, G., Chanda, B., Naher, N., *et al.* 2006. One Stop Crisis Centre: A model of hospital-based service for domestic violence, burn & sexual assault survivors in Bangladesh. *ORION Med J.*,25:407–10.
279. Khan, M., Bhattacharya, A., Bhuiya, I., *et al.* 2008. A situation analysis of care and support for rape survivors at first point of contact in India and Bangladesh. Washington, DC: Population Council. Available: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.490.9017&rep=rep1&type=pdf [Accessed 09.01.2015]
280. Grisurapong, S. 2004. Health sector responses to violence against women in Thailand. *J Med Assoc Thai.*,87(3):227–34.
281. Nagae, M., Kitabayashi, H. & Aoyama, A. 2004. Domestic violence as a women's health issue–activities of health professionals in Thailand. *J Public Health*,51(4):287.
282. Chepuka, L. 2013. Perceptions, experiences and health sector responses to intimate partner violence in Malawi: the centrality of context. PhD thesis. University of Liverpool.
283. Vetten, L. 2001. While women wait…can specialist sexual offences courts and centres reduce secondary victimisation? *Nedbank ISS Crime Index,* 5(3):36.
284. Office of the National Director of Public Prosecutions Sexual Offences and Community Affairs Unit. n.d. Report on the development of legislation and its impact on the lives of women 10 years post democracy. Available: http://www.pmg.org.za/docs/2004/appendices/040803soca.htm [Accessed 03.01.2012]

285. National Prosecuting Authority. 2007. National prosecuting authority of South Africa: Annual report 2006/2007. Pretoria, South Africa: National Prosecuting Authority. Available: http://www.gov.za/documents/national-prosecuting-authority-annual-report-20062007 [Accessed 10.01.2015]
286. ECIAfrica for RTI International. 2007. USAID South Africa Program in support of PEPFAR: Thuthuzela Care Centres FY06: Final report on the compliance assessment of the Thuthuzela Care Centres with national Department of Health guidelines for managing HIV in the context of sexual assault care. Pretoria, South Africa: Sexual Offences and Community Affairs Unit. Available: http://pdf.usaid.gov/pdf_docs/Pnadt749.pdf [Accessed 10.01.2015]
287. UNICEF.n.d. List of Thuthuzela Care Centres. Available: http://www.unicef.org/southafrica/protection_5080.html [Accessed 09.01.2015]
288. National Prosecuting Authority. 2014. National Prosecuting Authority of South Africa: Annual report 2013/2014. Pretoria, South Africa: National Prosecuting Authority. Available: https://www.issafrica.org/crimehub/uploads/NPA%20Annual%20Report%202013-2014.pdf [Accessed 10.01.2015]
289. Braam. T. & Lawrence, B. 2009. National audit of multi disciplinary services in South Africa - presentation on preliminary findings and recommendations. Available: https://www.npa.gov.za/sites/default/files/sexual-offences-indaba-2009/audit-findings-pres.pdf [Accessed 23.01.2015]
290. Budiharsana, M.P. & Tung, M.Q. 2010. Improving the health care response to gender-based violence – Phase II (Final project evaluation report). Hanoi: Population Council. Available: http://www.popcouncil.org/uploads/pdfs/2010RH_GBVIIReport.pdf [Accessed 09.01.2015]
291. Ravindran, T., Undurti, V. 2010. Dilaasa: Evaluation report. Mumbai: Centre for Enquiry into Health and Allied Themes.
292. Deosthalli, P., Maghnani, P. & Malik, S. 2005. Establishing Dilaasa: Documenting the challenges. Mumbai: Centre for Enquiry into Health and Allied Themes. Available: http://www.cehat.org/go/uploads/Dilaasa/estabdilaasa.pdf [Accessed 10.01.2015]
293. Bedone, A.J. & Faúndes, A. 2007. Comprehensive healthcare for female victims of sexual violence: the experience of the Women's Comprehensive Healthcare Center, State University in Campinas, Brazil. *Cad. Saúde Pública*,23(2):465–69.

294. Mattar, R., Abrahão, A.R., Andalaft Neto, J., *et al.* 2007. Multidisciplinary care for victims of sexual assault: The experience at the Federal University in São Paulo, Brazil. *Cad. Saúde Pública*,23(2):459–64.
295. Temmerman, M., Maternowska, C. & Othigo, M.J. 2009. Organising referral and health care for survivors of sexual violence; an example from Mombasa, Kenya. *Trop Med Int Health*,14(2):20.
296. Ranney, M.L., Rennert-May, E., Spitzer, R., *et al.* 2011. A novel ED-based sexual assault centre in Western Kenya: Description of patients and analysis of treatment patterns. *EMJ*,28(11):927–31.
297. Ferguson, C. 2006. Providing quality care to the sexual assault survivor: Education and training for medical professionals. *J Midwifery Womens Health*,51(6):486–92.
298. Kent-Wilkinson, A. 2011. Forensic nursing educational development: An integrated review of the literature. *J Psychiatr Ment Health Nurs.*,18(3):236–46.
299. Fitzpatrick, M., Ta, A., Lenchus, J., *et al.* 2012. Sexual assault forensic examiners' training and assessment using simulation technology. *J Emerg Nurs.*,38(1):85–90.
300. Marchetti, C.A., Fantasia, H.C. & Molchan, L. 2014. Attitudes of adult/adolescent sexual assault nurse examiners and caring for younger patients. *J Emerg Nurs.*,40(1):39–45.
301. Ledray, L.E. 1997. SANE program staff: Selection, training, and salaries. *J Emerg Nurs.*,23(5):491–95.
302. Du Mont, J. & Parnis, D. 2003. Forensic nursing in the context of sexual assault: Comparing the opinions and practices of nurse examiners and nurses. *Appl Nurs Res.*,16(3):173–83.
303. Cowley, R., Walsh, E. & Horrocks, J. 2014. The role of the sexual assault nurse examiner in England: Nurse experiences and perspectives. *J Forensic Nurs.*,10(2):77–83.
304. Lou, C.F. & Lee, S. 2005. The introduction and inspiration to a sexual assault nurse examiner in forensic nursing. *Hu Li Za Zhi*,52(6):57–62.
305. Méndez, R.M., Kulbok, P., Lawson, S., *et al.* 2013. Development of the commonwealth of Puerto Rico national protocol for the management of victims of sexual violence: adults/adolescents. *J Forensic Nurs.*,9(2):120–26.
306. Esteves, R.B., Lasiuk, G.C., Cardoso, L., *et al.* 2014. Toward the establishment of a forensic nursing specialty in Brazil: An integrative literature review. *J Forensic Nurs.*,10(4):189–98.

307. IAFN. n.d. International association of forensic nurses. Available: http://www.forensicnurses.org/search/custom.asp?id=2100 [Accessed 06.11.2014]
308. Sievers, V., Murphy, S. & Miller, J. 2003. Sexual assault evidence collection more accurate when completed by sexual assault nurse examiners: Colorado's experience. *J Emerg Nurs.*,29(6):511.
309. Campbell, R., Patterson, D. & Lichty, L.F. 2005. The effectiveness of Sexual Assault Nurse Examiner (SANE) programs. *Trauma Violence Abuse*,6(4):313–29.
310. Campbell, R., Patterson, D. & Bybee, D. 2012. Prosecution of adult sexual assault cases a longitudinal analysis of the impact of a sexual assault nurse examiner program. *Violence Women*,18(2):223–44.
311. Campbell, R., Bybee, D. & Townsend, S.M., *et al.* 2014. The impact of sexual assault nurse examiner programs on criminal justice case outcomes: A multisite replication study. *Violence Women*,20(5):607–25.
312. Ledray, L.E. & Simmelink, K. 1997. Efficacy of SANE evidence collection: A Minnesota study. *J Emerg Nurs*,23(1):75–77.
313. Dandino-Abbott, D. 1999. Birth of a sexual assault response team: The first year of the Lucas County/Toledo, Ohio, SART program. *J Emerg Nurs.*,25(4):333–36.
314. Campbell, R., Greeson, M.R. & Fehler-Cabral, G. 2013. With care and compassion: Adolescent sexual assault victims' experiences in sexual assault nurse examiner programs. *J Forensic Nurs.*,9(2):68–75.
315. Stermac, L.E. & Stirpe, T.S. 2002. Efficacy of a 2-year-old sexual assault nurse examiner program in a Canadian hospital. *J Emerg Nurs*,28(1):18–23.
316. Hornor, G., Thackeray, J., Scribano, P., *et al.* 2012. Pediatric sexual assault nurse examiner care: Trace forensic evidence, ano-genital injury, and judicial outcomes. *J Forensic Nurs.*,8(3):105–11.
317. Bechtel, K., Ryan, E. & Gallagher, D. 2008. Impact of sexual assault nurse examiners on the evaluation of sexual assault in a pediatric emergency department. *Pediatr Emerg Care*,24(7):442–47.
318. Patterson, D., Campbell, R. 2009. A comparative study of the prosecution of childhood sexual abuse cases: The contributory role of pediatric Forensic Nurse Examiner (FNE) programs. *J Forensic Nurs.*,5(1):38–45.
319. Ledray, L.E. 1997. SANE program locations: Pros and cons. Sexual assault nurse examiner. *J Emerg Nurs.*,23(2):182–86.

320. Campbell, R., Townsend, S.M., Long, S.M., *et al.* 2005. Organizational characteristics of sexual assault nurse examiner programs: Results from the national survey project. *J Forensic Nurs.*,1(2):57–64.
321. Logan, T.K., Cole, J. & Capillo, A. 2007. Sexual assault nurse examiner program characteristics, barriers, and lessons learned. *J Forensic Nurs.*,3(1):24–34.
322. Maier, S.L. 2012. Sexual assault nurse examiners' perceptions of funding challenges faced by SANE programs: "It stinks." *J Forensic Nurs.*,8(2):81–93.
323. Woodtli, M.A. & Breslin, E.T. 2002. Violence-related content in the nursing curriculum: A follow-up national survey. *J Nurs Educ.*,41(8):340–48.
324. Plichta, S.B., Clements, P.T. & Houseman, C. 2007. Why SANEs matter: Models of care for sexual violence victims in the emergency department. *J Forensic Nurs.*,3(1):15–23.
325. Price, B. 2010. Receiving a forensic medical exam without participating in the criminal justice process: What will it mean? *J Forensic Nurs.*,6(2):74–87.
326. Ciancone, A.C., Wilson, C., Collette, R., *et al.* 2000. Sexual assault nurse examiner programs in the United States. *Ann Emerg Med.*,35(4):353–57.
327. Cole, J., Logan & T.K. 2008. Negotiating the challenges of multidisciplinary responses to sexual assault victims: Sexual assault nurse examiner and victim advocacy programs. *Res Nurs Health*,31(1):76–85.
328. Campbell, R., Townsend, S.M., Long, S.M., *et al.* 2006. Responding to sexual assault victims' medical and emotional needs: A national study of the services provided by SANE programs. *Res Nurs Health*,29(5):384–98.
329. Draughon, J.E., Hauda, W.E., Price, B., *et al.* 2014. Factors associated with forensic nurses offering HIV nPEP status post sexual assault. *West J Nurs Res.*, 37(9): 1194-213.
330. Wasarhaley, N.E., Simcic, T.A. & Golding, J.M. 2012. Mock juror perception of sexual assault nurse examiner testimony. *Violence Vict.*,27(4):500–511.
331. Auten, J.D., Ross, E.M., French, M.A., *et al.* 2014. Low-fidelity hybrid sexual assault simulation training's effect on the comfort and competency of resident physicians. *J Emerg Med.*,48(3):344–50.
332. McLaughlin, S., Monahan, C., Doezema, D., *et al.* 2007. Implementation and evaluation of a training program for the management of sexual assault in the emergency department. *Ann Emerg Med.*,49(4):489–94.

333. Smock, W. 1994. Development of a clinical forensic medicine curriculum for emergency physicians in the USA. *J Clin Forensic Med.*,1(1):27–30.
334. Young, S., Wells, D. & Summers, I. 2004. Specific training in clinical forensic medicine is useful to ACEM trainees. *Emerg Med.*,16(5-6):441–45.
335. Wiler, J.L., Bailey, H. & Madsen, T.E. 2007. The need for emergency medicine resident training in forensic medicine. *Ann Emerg Med.*,50(6):733–38.
336. Parekh, V., Currie, M. & Brown, C. 2005. A postgraduate sexual assault forensic medicine program: Sexual assault medicine from scratch. *Med Sci Law*,45(2):121.
337. Atasoy, S., Cologlu, A.S., Abaci-Kalfoglu, E., *et al.* 1996. Postgraduate forensic science education in Turkey. *J Forensic Sci.*,41(2):206–8.
338. Mathiharan, K. 2005. Origin and development of forensic medicine in India. *Am J Forensic Med Pathol.*,26(3):254–60.
339. Balachandra, A.T., Vadysinghe, A.N. & William, A.L. 2011. Practice of forensic medicine and pathology in Sri Lanka. *Arch Pathol Lab Med.*,135(2):187–90.
340. Kharoshah, M.A., Zaki, M.K., Galeb, S.S., *et al.* 2011. Origin and development of forensic medicine in Egypt. *J Forensic Leg Med.*,18(1):10–13.
341. Al Madani, O.M., Kharoshah, M.A., Zaki, M.K., *et al.* 2012. Origin and development of forensic medicine in the Kingdom of Saudi Arabia. *Am J Forensic Med Pathol.*,33(2):147–51.
342. Magalhães, T., Dinis-Oliveira, R.J. & Santos, A. 2014. Teaching forensic medicine in the University of Porto. *J Forensic Leg Med.*,25:45–48.
343. Cronholm, P.F., Singh, V., Fogarty, C.T., *et al.* 2014. Trends in violence education in family medicine residency curricula. *Fam Med.*,46(8):620–25.
344. Heimer, G., Posse, B., Stenberg, A., *et al.* 1996. A national center for sexually abused women in Sweden. *Int J Gynaecol Obstet.*,53(1):35–39.
345. Kerr, E., Cottee, C., Chowdhury, R., *et al.* 2003. The haven: A pilot referral centre in London for cases of serious sexual assault. *Br Int J Obstet Gynaecol*,110:267–71.
346. Love, L. 2012. My experience of the DFCASA exam including recommendations to potential candidates. *J Forensic Leg Med.*,19(1):48–50.
347. Royal College of Physicians: The Faculty of Forensic & Legal Medicine. 2014. DFCASA. Available: http://fflm.ac.uk/education/licentiatesom/ [Accessed 11.11.2014]
348. Emerson, C.R. & Sacks, R. 2013. Assessing the sexual violence services currently provided in genitourinary medicine clinics. *Sex Transm Infect.*,89(5):371.

349. Sacks, R. & Emerson, C. 2014. Genitourinary medicine trainees' experience and training needs in the management of patients disclosing sexual violence. *Int J STD AIDS*,25(5):366–68.
350. Suchak, T., Sacks, R. & Dhairyawan, R. 2014. Evaluation of the inaugural BASHH sexual violence training day. *Sex Transm Infect.*,90(3):184.
351. Hibbard, R.A., Serwint, J. & Connolly, M. 1987. Educational program on evaluation of alleged sexual abuse victims. *Child Abuse Negl.*,11(4):513–19.
352. Botash, A.S., Galloway, A.E., Booth, T., *et al.* 2005. Continuing medical education in child sexual abuse: Cognitive gains but not expertise. *Arch Pediatr Adolesc Med.*,159(6):561–66.
353. Jones, J.G., Garrett, J., Worthington, T. 2004. A videotape series for teaching physicians to evaluate sexually abused children. *J Child Sex Abuse*,13(1):87–97.
354. MacLeod, K.J., Marcin, J.P., Boyle, C., *et al.* 2009. Using telemedicine to improve the care delivered to sexually abused children in rural, underserved hospitals. *Pediatrics*,123(1):223–28.
355. International Society for the Prevention of Child Abuse and Neglect. n.d.. ISPCAN Medical Curriculum. Available: http://www.ispcan.org/?Medical_Curriculum [Accessed 28.06.2015]
356. Koschorke, A., Tilzey, A. & Welch, J. 2007. Should medical students be taught about rape? A survey of UK medical schools. *Br Int J Obstet Gynaecol.*,114(2):224–25.
357. Milone, J.M., Burg, M.A., Duerson, M.C., *et al.* 2010. The effect of lecture and a standardized patient encounter on medical student rape myth acceptance and attitudes toward screening patients for a history of sexual assault. *Teach Learn Med.*,22(1):37–44.
358. Kennedy, K.M., Vellinga, A., Bonner, N., *et al.* 2013. How teaching on the care of the victim of sexual violence alters undergraduate medical students' awareness of the key issues involved in patient care and their attitudes to such patients. *J Forensic Leg Med.*,20(6):582–87.
359. Kennedy, K. 2014. The case in favour of educating medical students about sexual violence. *Med Teach.*,36(3):267–68.
360. Dorsey, J.K., Gocey, J., Murrell, K., *et al.* 1996. Medical student response to an interactive patient simulation program used to supplement child abuse education. *Child Abuse Negl.*,20(10):973–77.

361. Cavanagh, M.R.. 2004. Sexual abuse inquiry and response: A New Zealand training programme. *N Z J Hist.*,33(3):137–44.
362. Donohoe, J. 2010. Uncovering sexual abuse: Evaluation of the effectiveness of the victims of violence and abuse prevention programme. *J Psychiatr Ment Health Nurs.*,17(1):9–18.
363. Smith, J.R., Ho, L.S., Langston, A., *et al.* 2013. Clinical care for sexual assault survivors multimedia training: A mixed-methods study of effect on healthcare providers' attitudes, knowledge, confidence, and practice in humanitarian settings. *Confl Health*,7:14.
364. Pennington, E.C., Zwemer, F.L. & Krebs, D.A. 2010. Unique sexual assault examiner program utilizing mid-level providers. *J Emerg Med*,38(1):95–98.
365. Hirschowitz, R., Worku, S. & Orkin, M. 2000. Quantitative research findings on rape in South Africa. Pretoria: Statistics SA. Available: http://www.statssa.gov.za/publications/Rape/Rape.pdf [Accessed 06.12.2014]
366. Nesvold, H., Friis, S. & Ormstad, K. 2008. Sexual assault centers: Attendance rates, and differences between early and late presenting cases. *Acta Obstet Gynecol Scand.*,87(7):707–15.
367. Ahrens, C.E., Campbell, R., Ternier-Thames, N.K., *et al.* 2007. Deciding whom to tell: Expectations and outcomes of rape survivors' first disclosures. *Psychol Women Q.*,31(1):38–49.
368. Ullman, S.E. 1996. Do social reactions to sexual assault victims vary by support provider? *Violence Vict.*,11(2):143–57.
369. Nesvold, H., Ormstad, K. & Friis, S. 2011. Sexual assault centres and police reporting - An important arena for medical/legal interaction. *J Forensic Sci*,56(5):1163–69.
370. Jordan, J. 2001. Worlds apart? Women, rape and the police reporting process. *Br J Criminol.*,41(4):679–706.
371. Artz, L. & Smythe, D. 2007. Case attrition in rape cases: A comparative analysis. *South Afr J Crim Justice*,20(2):158–81.
372. Daly, K. & Bouhours, B. 2010. Rape and attrition in the legal process: A comparative analysis of five countries. *Crime Justice*,39(1):565–650.
373. Idisis, Y., Ben-David, S. & Ben-Nachum, E. 2007. Attribution of blame to rape victims among therapists and non-therapists. *Behav Sci Law*,25(1):103–20.
374. Moolman, C.J. 1988. Potential victim's role in the prevention of rape. *Med Law*,8(2):137–41.

375. Estrich, S. Real rape: How the legal system victimises women who say no. Boston: Harvard University Press, 1987.
376. Frazier, P.A. & Haney, B. 1996. Sexual assault cases in the legal system: Police, prosecutor, and victim perspectives. *Law Hum Behav.*,20(6):607–28.
377. Adler, Z. Rape on trial. London: Routledge, 1987.
378. Kelly, L., Lovett, J., Regan, L., *et al.* 2005. A gap or a chasm? Attrition in reported rape cases. Home Office Research, Development and Statistics Directorate London. Available: http://webarchive.nationalarchives.gov.uk/20110218135832/rds.homeoffice.gov.uk/rds/pdfs05/hors293.pdf [Accessed: 06.12.2014]
379. Eogan. M., McHugh, A. & Holohan, M. 2013. The role of the sexual assault centre. *Best Pract Res Clin Obstet Gynaecol.*,27(1):47–58.
380. Higgins, J.P., Green, S. Cochrane handbook for systematic reviews of interventions, Vol. 5. The Cochrane Collaboration, 2011. Available: http://handbook.cochrane.org/ [Accessed 13.06.2015]
381. Fanslow, J.L., Norton, R.N., Robinson, E.M., *et al.* 1998. Outcome evaluation of an emergency department protocol of care on partner abuse. *Aust N Z J Public Health*,22(5):598–603.
382. Fanslow, J.L., Norton, R.N. & Robinson, E.M. 1999. One year follow up of an emergency department protocol for abused women. *Aust N Z J Public Health*,23(4):418–20.
383. Freire, A.M. & Macedo, D. The Paulo Freire Reader. New York: Continuum, 1998.
384. Fleiss, J.L., Levin, B. & Paik, M.C. Statistical methods for rates and proportions. New Jersey: John Wiley & Sons, 2013.
385. Burt, M.R. 1980. Cultural myths and supports for rape. *J Pers Soc Psychol.*,38(2):217.
386. Pulerwitz, J. & Barker, G. 2008. Measuring attitudes toward gender norms among young men in Brazil. *Men Masculinities*,10(3):322.
387. Abbey, A., Parkhill, M.R., BeShears, R., *et al.* 2006. Cross-sectional predictors of sexual assault perpetration in a community sample of single African American and Caucasian men. *Aggress Behav.*,32(1):54–67.
388. Garcia-Moreno, C., Jansen, H.A., Ellsberg, M., *et al.* 2006. Prevalence of intimate partner violence: Findings from the WHO culti-Country study on women's health and domestic violence. *Lancet*,368(9543):1260–69.

389. Case, S.M. & Swanson, D.B. Constructing written test questions for the basic and clinical sciences. Philadelphia: National Board of Medical Examiners, 2002.
390. South Africa. Criminal Procedure Act No. 51 of 1977 (as amended).
391. Laitinen, F.A., Grundmann, O. & Ernst, E.J. 2013. Factors that influence the variability in findings of anogenital injury in adolescent/adult sexual assault victims: A review of the forensic literature. *Am J Forensic Med Pathol.*,34(3):286–94.
392. Pokorny, S.F. 1993. The genital examination of the infant through adolescence. *Curr Opin Obstet Gynecol.*,5(6):753–57.
393. Raifman, S., Askew, I., Amin, S., *et al.* 2011. The prevention and management of HIV and sexual and gender-based violence: Responding to the needs of survivors and those-at-risk. Washington, DC: Population Council. Available: http://www.popcouncil.org/uploads/pdfs/2011_HIVSGBVBrief.pdf [Accessed 09.01.2015]
394. Kuhlmann, A.S., Gavin, L. & Galavotti, C. 2010. The integration of family planning with other health services: A literature review. *Integration*,36(4):189–96.
395. Guedes, A., Bott, S., Güezmes, A., *et al.* 2002. Gender-based violence, human rights, and the health sector: Lessons from Latin America. *Health Hum Rights*,6(1):177–93.
396. Patterson, D. & Tringali, B. 2015. Understanding how advocates can affect sexual assault victim engagement in the criminal justice process. *J Interpers Violence*,30(12):1987–97.
397. Moylan, C.A., Lindhorst, T. & Tajima, E.A. 2015. Contested discourses in multidisciplinary sexual assault response teams (SARTs). *J Interpers Violence*, pii: 0886260515585530. doi: 10.1177/0886260515585530 [Accessed 09.06.2015]
398. Martsolf,D.S., Draucker, C.B., Cook, C.B., *et al.* 2010. A meta-summary of qualitative findings about professional services for survivors of sexual violence. *Qual Rep Online*,15(3):489–506.
399. Feder, G.S., Hutson, M., Ramsay, J., *et al.* 2006. Women exposed to intimate partner violence: Expectations and experiences when they encounter health care professionals: A meta-analysis of qualitative studies. *Arch Intern Med.*,166(1):22–37.
400. Basu, S. & Ratcliffe, G. 2014. Developing a multidisciplinary approach within the ED towards domestic violence presentations. *EMJ*,31(3):192–95.
401. Coyer, S.M., Plonczynski, D.J., Baldwin, K.B., *et al.* 2006. Screening for violence against women in a rural health care clinic. *Online J Rural Nurs Health Care*,6(1):47–54.

402. Feder, G., Davies, R.A., Baird, K., *et al.* 2011. Identification and referral to improve safety (IRIS) of women experiencing domestic violence with a primary care training and support programme: A cluster randomised controlled trial. *Lancet*,378(9805):1788–95.
403. Harwell, T.S., Casten, R.J., Armstrong, K.A., *et al.* 1998. Results of a domestic violence training program offered to the staff of urban community health centers. *Am J Prev Med.*,15(3):235–42.
404. McCaw, B., Berman, W.H., Syme, S.L., *et al.* 2001. Beyond screening for domestic violence: A systems model approach in a managed care setting. *Am J Prev Med.*,21(3):170–76.
405. Muñoz, C.F., Martín, C.M., Vivancos, E.D., *et al.* 2001. Improving care for victims of domestic violence. Impact of a priority intervention. *Atencion PrimariaSociedad Esp Med Fam Comunitaria*,28(4):241–48.
406. Ramsden, C. & Bonner, M. 2002. A realistic view of domestic violence screening in an emergency department. *Accid Emerg Nurs.*,10(1):31–39.
407. Short, L.M., Hadley, S.M. & Bates, B. 2002. Assessing the success of the WomanKind program: An integrated model of 24-hour health care response to domestic violence. *Domest Violence Health Care Policies Prev.*,35(2-3):101–19.
408. Wiist, W.H., McFarlane, J. 1999. The effectiveness of an abuse assessment protocol in public health prenatal clinics. *Am J Public Health*,89(8):1217–21.
409. Malpass, A., Sales, K., Johnson, M., *et al.* 2014. Women's experiences of referral to a domestic violence advocate in UK primary care settings: A service-user collaborative study. *Br J Gen Pract J R Coll Gen Pract.*,64(620):151–58.
410. Hegarty, K. & Glasziou, P. 2011. Tackling domestic violence: Is increasing referral enough? *Lancet*,378(9805):1760–62.
411. Brooker, C. & Durmaz, E. 2015. Mental health, sexual violence and the work of sexual assault referral centres (SARCs) in England. *J Forensic Leg Med.*,31:47–51.
412. Jassat W. 2011. An evaluation of the cervical cancer screening programme in Johannesburg metro district, Gauteng province. MMed thesis. University of the Witwatersrand.
413. Rhodes, K.V., Grisso, J.A., Rodgers, M., *et al.* 2014. The anatomy of a community health center system-level intervention for intimate partner violence. *J Urban Health Bull N Y Acad Med.*,91(1):107–21.

414. Ericksen, J., Dudley, C., McIntosh, G., *et al.* 2002. Clients' experiences with a specialized sexual assault service. *J Emerg Nurs.*,28(1):86–90.
415. Jenkins, S.R. & Baird, S. 2002. Secondary traumatic stress and vicarious trauma: A validational study. *J Trauma Stress*,15(5):423–32.
416. Coll-Vinent, B., Echeverría, T., Farràs, Ú., *et al.* 2008. Intimate partner violence is not identified as a health problem by health care workers. *Gac Sanit.*,22(1):7–10.
417. Djikanovic, B., Celik, H., Simic, S., *et al.* 2010. Health professionals' perceptions of intimate partner violence against women in Serbia: Opportunities and barriers for response improvement. *Patient Educ Couns.*,80(1):88–93.
418. Natan, M.B. & Rais, I. 2010. Knowledge and attitudes of nurses regarding domestic violence and their effect on the identification of battered women. *J Trauma Nurs.*,17(2):112.
419. Lunney, M. 2008. Critical need to address accuracy of nurses' diagnoses. *OJIN Online J Issues Nurs.*,13(1). doi: 10.3912/OJIN.Vol13No01PPT06 [Accessed 31.07.2012]
420. South Africa. The Criminal Law (Sexual Offences and Related Matters) Amendment Act No. 32 of 2007.
421. Jina, R., Jewkes, R., Christofides, N., *et al.* 2013. Knowledge and confidence of South African health care providers regarding post-rape care: A cross-sectional study. *BMC Health Serv Res.*,13(1):257.
422. Stenson, K. & Heimer, G. 2008. Prevalence of experiences of partner violence among female health staff: Relevance to awareness and action when meeting abused women patients. *Womens Health Issues*,18(2):141–49.
423. Jewkes, R., Sen, P., Garcia-Moreno, C. Sexual violence *In:* World report on violence and health. Geneva: World Health Organization, 2002, pp.47–82.
424. Du Mont, J. & White D. 2007. The uses and impacts of medico-legal evidence in sexual assault cases: A global review. Geneva, Switzerland: World Health Organization, Sexual Violence Research Initiative. Available: http://www.svri.org/medico.pdf [Accessed 10.02.2015]
425. Wang, S.K. & Rowley, E. 2008. Rape: responses from women and health providers. Geneva, Switzerland: Sexual Violence Research Initiative, World Health Organization.
426. Wiley, J., Sugar, N., Fine, D., *et al.* 2003. Legal outcomes of sexual assault. *Am J Obstet Gynecol.*,188(6):1638–41.
427. Lindsay, S.P. 1998. An epidemiologic study of the influence of victim age and relationship to the suspect on the results of evidentiary examinations and law

enforcement outcomes in cases of reported sexual assault. PhD thesis. San Diego State University.

428. Biology Training Section. 2000. Evidence collection kits: the new series of ECK for biological evidence. Pretoria, South Africa: DNA Unit SAPS Forensic Science Laboratory.
429. Gross, S.R., Jacoby, K., Matheson, D.J., *et al.* 2005. Exonerations in the United States 1989 through 2003. *J Crim Law Criminol.*, 95(2):523–60.
430. Sidiropoulos, E., Jeffery, A., Forgey, H., *et al.* 1998. South Africa Survey 1997/98. Johannesburg, South Africa: South African Institute of Race Relations. Available: http://www.sahistory.org.za/sites/default/files/SAIRR%20Survey%201997-98.pdf [Accessed 06.12.204]
431. Blass, L. 2004. The responses of the criminal justice system to sexual violence crimes in the Kathorus region. Johannesburg, South Africa: Centre for Applied Legal Studies, University of the Witwatersrand.
432. Lovrich, N.P., Pratt, T.C., Gaffney, M.J., *et al.* 2003. National forensic DNA study report. Pullman (Washington): Division of Governmental Studies and Services, Washington State University. Available: https://www.ncjrs.gov/pdffiles1/nij/grants/203970.pdf [Accessed 01.05.2015]
433. Norfolk, G.A. & White, C. 2006. Interpreting evidence in court - the dangers and pitfalls. *J Clin Forensic Med.*,13(4):160–61.
434. Keen-Payne, R. 1988. Serving as an expert witness in rape cases. *Nurse Pract.*,13(7):59–60.
435. Adams, J.A. 2008. Guidelines for medical care of children evaluated for suspected sexual abuse: An update for 2008. *Curr Opin Obstet Gynecol.*,20(5):435–41.
436. Logan, T.K., Cole, J. & Capillo, A. 2007. Differential characteristics of intimate partner, acquaintance, and stranger rape survivors examined by a sexual assault nurse examiner (SANE). *J Interpers Violence*,22(8):1066–76.
437. Golden, L. 2012. J-88: A form you never want to have to fill out. Available: http://journalism.co.za/indepth/joburgjustice/?page_id=230 [Accessed 08.01.2015]
438. Artz, L. & Smythe, D. 2007. Losing ground? Making sense of attrition in rape cases. *SA Crime Q.*, 22: 13–20.
439. Jina, R., Jewkes, R., Christofides, N., *et al.* 2014. A cross-sectional study on the effect of post-rape training on knowledge and confidence of health professionals in South Africa. *Int J Gynecol Obstet.*,126(2):187–92.

440. Hariton, T.N. 2012. Sexual assault in prepubertal girls: “It Is normal to be normal” - or is it? Evidence of vaginal penetration in prepubertal girls. *Med Sci Law*,52(4):193–97.
441. Plummer, S. & Findley, P. 2012. Women with disabilities’ experience with physical and sexual abuse: Review of the literature and implications for the field. *Trauma Violence Abuse*,13(1):15–29.
442. Chave-Cox, R.S. 2014. Forensic examination of the mentally disabled sexual abuse complainant. *J Forensic Leg Med.*,25:71–75.
443. United States Department of Justice. 2006. National training standards for sexual assault medical forensic examiners. Washington, DC: United States Department of Justice. Available: https://www.ncjrs.gov/pdffiles1/ovw/213827.pdf [Accessed 06.01.2012]
444. French, B. 2006. Uncertainty and information need in nursing. *Nurse Educ Today*,26(3):245–52.
445. Berner, E.S. & Graber, M.L. 2008. Overconfidence as a cause of diagnostic error in medicine. *Am J Med.*,121(5):2–23.
446. Baumann, A.O., Deber, R.B. & Thompson, G.G. 1991. Overconfidence among physicians and nurses: The “micro-certainty, macro-uncertainty” phenomenon. *Soc Sci Med.*,32(2):167–74.
447. Walter, S.D., Mitchell, A., Southwell, D. 1995. Use of certainty of opinion data to enhance clinical decision making. *J Clin Epidemiol.*,48(7):897–902.
448. Sitzia, J. 2002. Barriers to research utilisation: The clinical setting and nurses themselves. *Intensive Crit Care Nurs.*,18(4):230–43.
449. Carnevali, D.L., Thomas, M.D., Godson, L.T., *et al.* Diagnostic reasoning and treatment decision making in nursing. Philadelphia: Lippincott Williams and Wilkins, 1993.
450. Lunney, M. 1990. Accuracy of nursing diagnoses: Concept development. *Int J Nurs Terminol Classif.*,1(1):12–17.
451. Ullman, S.E. & Townsend, S.M. 2007. Barriers to working with sexual assault survivors a qualitative study of rape crisis center workers. *Violence Women*,13(4):412–43.
452. Jenkins MJ, Dambrot FH. 1987. The Attribution of Date Rape: Observer’s Attitudes and Sexual Experiences and the Dating Situation. *J. Appl. Soc. Psychol.*,17(10):875–95.

453. Alexander, C.S. 1980. The responsible victim: Nurses' perceptions of victims of rape. *J Health Soc Behav.*,21(1):22–33.
454. Boutcher, F. & Gallop, R. 1996. Psychiatric nurses' attitudes toward sexuality, sexual assault/rape, and ncest. *Arch Psychiatr Nurs.*,10(3):184–91.
455. Cochrane, D.A. 1986. Emergency nurses' attitudes toward the rape victim. *AARN News Lett.*,43(7):14–18.
456. Damrosch, S.P. 1985. How perceived carelessness and time of attack affect nursing students' attributions about rape victims. *Psychol Rep.*,56(2):531–36.
457. Damrosch, S.P., Gallo, B., Kulak, D., *et al.* 1987. Nurses' attributions about rape victims. *Res Nurs Health*,10(4):245–51.
458. Damrosch, S.P. 1981. How nursing students' reactions to rape victims are affected by a perceived act of carelessness. *Nurs Res.*,30(3):168–69.
459. McGrath, M.E., Bettacchi, A., Duffy. S.J., *et al.* 1997. Violence against women: Provider barriers to intervention in emergency departments. *Acad Emerg Med.*,4(4):297–300.
460. Jewkes, R., Sikweyiya, Y., Dunkle, K., *et al.* 2015. Relationship between single and multiple perpetrator rape perpetration in South Africa: A comparison of risk ractors in a population-based sample. *BMC Public Health*,15(1):616.
461. Komape, L.J. 2014. Exploring public perceptions of South African private and public hospitals and prefernces for health care providers. MPH thesis. University of the Witwatersrand.
462. Goudge, J., Gilson, L., Russell, S., *et al.* 2009. Affordability, availability and acceptability barriers to health care for the chronically ill: Longitudinal case studies from South Africa. *BMC Health Serv Res.*,9(1):75.
463. Darnell, D., Peterson, R., Berliner, L., *et al.* 2015. Factors associated with follow-up attendance among rape victims seen in acute medical care. *Psychiatry*,78(1):89–101.
464. Mojaki, M.E., Basu, D., Letskokgohka, M.E., *et al.* 2011. Referral steps in district health system are side-stepped. *S Afr Med J*,101(2):109.
465. Statistics South Africa. 2015. General household survey 2014. Pretoria, South Africa: StatsSA. Available: http://www.statssa.gov.za/publications/P0318/P03182014.pdf [Accessed 06.06.2015]
466. McIntyre, D., Goudge, J., Harris, B., *et al.* 2009. Prerequisites for national health insurance in South Africa: Results of a national household survey. *S Afr Med J.*,99(10):725–29.

467. Chowdhury-Hawkins, R., McLean, I., Winterholler, M., *et al.* 2008. Preferred choice of gender of staff providing care to victims of sexual assault in sexual assault referral centres (SARCs). *J Forensic Leg Med.*,15(6):363–67.
468. Liddell, W.B. 2002. Does provider gender matter in sexual assault treatment? An enlightening review of practice and research. *Adv Nurse Pract.*,10(7):55–57.
469. Sprague, C., Woollett, N., Parpart, J., *et al.* 2015. When nurses are also patients: Intimate partner violence and the health system as an enabler of women's health and agency in Johannesburg. *Glob Public Health*,1–15.
470. Sadock, B.J. & Sadock, V.A. Synopsis of psychiatry. Philadelphia: Lippincott Williams & Wilkins, 2003.
471. Maier, S.L. 2012. The complexity of victim-questioning attitudes by rape victim advocates exploring some gray areas. *Violence Women*,18(12):1413–34.
472. Bell, H., Kulkarni, S. & Dalton, L. 2003. Organizational prevention of vicarious trauma. *Fam Soc J Contemp Soc Serv.*,84(4):463–70.
473. Short, L.M., Johnson, D., Osattin, A. 1998. Recommended components of health care provider training programs on intimate partner violence. *Am J Prev Med*,14(4):283–88.

ANNEXURE A. STUDY 2: SELF-ADMINISTERED QUESTIONNAIRE FOR HEALTH CARE PROVIDERS

EXPLORING THE IMPLEMENTATION OF A SEXUAL ASSAULT CARE PRACTITIONERS' TRAINING CURRICULUM WITHIN THE CONTEXT OF THE BROADER HEALTH CARE SYSTEM

SERVICE PROVIDER SELF-ADMINISTERED QUESTIONNAIRE

POST-INTERVENTION

Please create a unique survey number using the following instructions:

Enter the last digit of your personal cell phone number [ ]

Enter the last two letters of your surname [ ] [ ]

Enter the last letter of the city that you were born in [ ]

PLEASE CIRCLE THE NUMBER THAT CORRESPONDS WITH YOUR RESPONSES

CORRECT ERRORS CLEARLY BY PLACING TWO DIAGONAL LINES THROUGH THE INCORRECT ANSWER AND THEN CIRCLING THE CORRECT ANSWER

1.	What is today's date?	___ ___ / _____/ 2008
2	Where are you attending this sexual assault training?	Gauteng ……..…… 1 KwaZulu Natal ……..…. 2 Free State ……..... 3
3	Your age	[ ] [ ] years
4	In which country did you do your basic training?	In South Africa……1 Else……...2 Specify: _____
5	In which institution did you train as a doctor or nurse?	
6	Which level of health care facility are you working in?	Clinic/Community Health Centre…….……..1 District Hospital……..……2 Regional Hospital……3 Tertiary Hospital……..4
7	Which province are you working in?	Gauteng……1 Mpumalanga……2 North West……...…….3 Limpopo……...……4 KwaZulu-Natal……5 Northern Cape…….….6 Eastern Cape……..……...7 Free State…….……8 Western Cape…….……..9
8	What is your sex?	Male……..……1 Female……...……2
9	What is your rank/position in this facility?	Doctor (full-time public sector)……..….1 Doctor (sessions in public sector)……2 Professional nurse…….....3 Other: _____
10	Are you a community service doctor?	Yes……...1 No……0
11	How long have you been in service at your current facility (in years)?	[ ] [ ] years
12	How long have you been in service in total (in years)?	[ ] [ ] years
13	What work do you do in the facility?	
How much did the following factors influence how you came to be involved in sexual assault care? Rank each of the statements numbered 14-19 below on a scale of 1-5 (where 1 is very little and 5 is a lot)?		
14	Experience of sexually assault of someone close to me	[ ]
15	An opportunity to advance at work	[ ]
16	Intellectual interest in the area	[ ]
17	Extra pay for being on call	[ ]
18	Feeling passionate about rape issues	[ ]
19	Just part of my job	[ ]
20	What is the main reason why you are working in rape services?	_____

21	Is there a Crisis Centre (specific area with dedicated staff) for rape survivors in the facility where you work?	Yes……..….1 No…….……...0
22	Is the Crisis Centre "functional" 24 hours a day, 7 days a week?	Yes……..….1 No…….……...0
23	What proportion of rape survivors that come to your facility do you see?	0-20%.....1 21-40%.....2 41-60%.....3 61-80%.....4 81-100%.....5
24	Have you examined rape survivors and completed a J88 form in the last 3 months?	Yes……..….1 No…….……...0
25	How many adult rape cases (of the age of 14 and older) have you seen in the last 3 months?	[ ] [ ] [ ]
26	How many child sexual abuse cases (under the age of 14 years) have you seen in the last 3 months?	[ ] [ ] [ ]
27	How many hours of training on counselling (including VCT) have you received?	[ ] [ ] [ ] hours
28	Was the first training you received on counselling during undergraduate (basic) training or while you have been in-service practicing as a clinician?	Undergraduate……...1 In-service……..2 Other: ……..…… 3 (Specify) _____
29	In which year did you last receive the training on counselling?	_ _ _ _
30	Have you ever received any training on the management of rape?	Yes……..….1 No…….……...0
31	How many hours of training on the management of rape did you receive during your undergraduate years?	[ ] [ ] [ ] hours
32	How many hours of training on the management of rape did you receive while you have been in-service practicing as a clinician?	[ ] [ ] [ ] hours
33	In which year did you last receive training on the management of rape (Not counting the current training)?	_ _ _ _

	What did the in-service training cover? (Circle *yes* or *no* for each one)	34	Medical treatment excluding PEP	Yes = 1	No = 0
		35	PEP	Yes = 1	No = 0
		36	Using the SAECK	Yes = 1	No = 0
		37	Completing the J88 form	Yes = 1	No = 0
		38	Law	Yes = 1	No = 0
		39	Giving evidence in court	Yes = 1	No = 0
		40	Referrals to other services	Yes = 1	No = 0
		41	Psychosocial issues	Yes = 1	No = 0
		42	Caring for sexual assaulted children	Yes = 1	No = 0
		43	Discussing sexuality after rape	Yes = 1	No = 0
		44	Mental health of survivors	Yes = 1	No = 0
		45	Secondary victimisation	Yes = 1	No = 0
		46	Gender issues	Yes = 1	No = 0
		47	Other: _____	Yes = 1	No = 0

How important are the following in the services that you provide? Rank each of the statements numbered 48-55 below on a scale of 1-5 (where 1 is no importance and 5 is very important)?

48	Not judging patients	[ ]
49	Planning follow up care for all patients	[ ]
50	Explaining to patients about their care	[ ]
51	Thinking about patient's psychological needs	[ ]
52	Listening to patient's problems	[ ]
53	Keeping good records	[ ]
54	Providing evidence-based care	[ ]
55	Making sure that national management guidelines are followed	[ ]

The next set of questions ask about how confident you feel about undertaking a range of activities that could be part of sexual assault care. Please could you indicate on a scale from 1-10, where 1 indicates no confidence and 10 total confidence, How confident you feel about each the following activities numbered 56-66? Please place the number in the boxes provided e.g. "02"

56	How confident do you feel about examining an adult rape survivor?	[ ] [ ]
57	completing a SAECK with an adult rape survivor?	[ ] [ ]
58	completing a J88 form?	[ ] [ ]
59	examining a paediatric rape survivor?	[ ] [ ]
60	providing pre-test counselling for HIV?	[ ] [ ]
61	discussing common psychological symptoms and coping with these with survivors?	[ ] [ ]
62	supporting adherence with PEP?	[ ] [ ]
63	talking with survivors about sexuality, sexual health and condom use after rape?	[ ] [ ]
64	talking with parents about supporting children who have been sexually assaulted?	[ ] [ ]
65	managing HIV prevention in patients who have other medical conditions?	[ ] [ ]
66	explaining findings in court?	[ ] [ ]

Please state whether you strongly agree (SA), agree (A), disagree (D) or strongly disagree (SD) with the following statements:					
		SA	**A**	**D**	**SD**
67	A woman who has been raped has a serious medical problem	1	2	3	4
68	A person rarely dies from injuries after rape and so they should wait for their turn for care	1	2	3	4
69	Some women lie about rape to punish men	1	2	3	4
70	Rape is more serious for someone who is a virgin	1	2	3	4
71	A child who has been raped is an emergency medical case	1	2	3	4
72	Sex workers cannot really be raped	1	2	3	4
73	If a woman is drunk, it is impossible to say she didn't agree to sex	1	2	3	4
74	Rape can make a man a homosexual	1	2	3	4
75	It is disgraceful for women to bring rape cases to court	1	2	3	4
76	A woman who is raped brings shame on her family	1	2	3	4
77	Rape leaves obvious signs of injury	1	2	3	4
78	Sex is the primary motivation for rape	1	2	3	4
79	Only certain types of women are raped	1	2	3	4
90	When women talk and act sexy, they are inviting rape	1	2	3	4
81	When a woman is raped, she usually did something careless to put herself in that situation	1	2	3	4
82	Many rapes happen because women lead men on	1	2	3	4
83	In some rape cases women actually want it to happen	1	2	3	4
84	If a woman doesn't physically fight back, you can't really say it was rape	1	2	3	4
85	In any rape case one would have to question whether the victim is promiscuous or has a bad reputation	1	2	3	4
86	Many so-called rape victims are actually women who had sex and 'changed their minds' afterwards	1	2	3	4
87	A husband has the right to sex with his wife whenever he wants	1	2	3	4

Please state whether the following statements describes you well or not at all.						
		Doesn't describe me				**Describes me well**
88	I often have tender, concerned feelings for people less fortunate than me.	1	2	3	4	5
89	When I see someone being taken advantage of, I feel protective toward them.	1	2	3	4	5
90	I am often touched by things that I see happen	1	2	3	4	5
91	I would describe myself as a pretty soft-hearted person	1	2	3	4	5

Thank you for answering these questions so far. We know there are a lot of questions and we hope you found them interesting. We want to ask you a few more. Again please state whether you strongly agree (SA), agree (A), disagree (D) or strongly disagree (SD) with the following statements.

		SA	A	D	SD
92	It is the man who decides what type of sex to have.	1	2	3	4
93	A woman's most important role is to take care of her home and cook for her family.	1	2	3	4
94	Men need sex more than women do.	1	2	3	4
95	You don't talk about sex, you just do it.	1	2	3	4
96	Women who carry condoms on them are "easy".	1	2	3	4
97	A man needs other women, even if things with his wife are fine.	1	2	3	4
98	There are times when a woman deserves to be beaten.	1	2	3	4
99	Changing diapers, giving kids a bath, and feeding the kids are the mother's responsibility.	1	2	3	4
100	It is a woman's responsibility to avoid getting pregnant.	1	2	3	4
101	A man should have the final word about decisions in his home.	1	2	3	4
102	Men are always ready to have sex.	1	2	3	4
103	A woman should tolerate violence in order to keep her family together.	1	2	3	4
104	If a woman cheats on a man, it is okay for him to hit her.	1	2	3	4
105	If someone insults me, I will defend my reputation, with force if I have to.	1	2	3	4
106	I would be outraged if my partner asked me to use a condom.	1	2	3	4
107	It is okay for a man to hit his wife if she won't have sex with him.	1	2	3	4
108	A couple should decide together if they want to have children.	1	2	3	4
109	In my opinion, a woman can suggest using condoms just like a man can.	1	2	3	4
110	It is important that a father is present in the lives of his children, even if he is no longer with the mother.	1	2	3	4
111	A man and a woman should decide together what type of contraceptive to use.	1	2	3	4
112	It is important to have a male friend that you can talk about your problems with.	1	2	3	4

RELATIONS AT HOME AND WITH FAMILY

Now we would like to ask you some questions about your home.

113	Who do you live with? (Mark all that apply)	On your own……1 Spouse/Partner……2 Children under 18 years……3 Children over 18 years……4 Your Mother/mother-in-law……5 Your Father/ father-in-law……6 Other Female Relative……7 Other Male Relative ……8 Others……9
114	When was the last time you cooked for a relative or friend?	Within this week……1 Two weeks ago……2 More than 2 weeks but within last year……3 Longer ago or never……4
115	When was the last time you washed clothes for a relative or friend?	Within this week……1 Two weeks ago……2 More than 2 weeks but within last year……3 Longer ago or never……4
116	When was the last time you washed clothes or ironed for yourself?	Within this week……1 Two weeks ago……2 More than 2 weeks but within last year……3 Longer ago or never……4

117	When was the last time you cooked for yourself?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
118	When was the last time you talked to a family member or friend about rape?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
119	When was the last time you talked to a family member or friend about problems you are facing in your life?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
120	When was the last time a family member or friend came to explain his or her problems to you?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
121	When was the last time you spoke to a family member or friend about HIV?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
122	When was the last time you spoke to a family member or friend about mental health, stress or psychological distress related issues?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4
123	When was the last time you spoke to a female family member about how to get men to take responsibility for preventing rape and violence against women?	Within this week……..……..…..1 Two weeks ago……..……2 More than 2 weeks but within last year…….....3 Longer ago or never……..……4

We'd like now to ask some questions about expectations of home life

		Often	**Now & again**	**Never**
124	How often do you expect men to play with any of the children	1	2	3
125	How often do you expect men to talk about personal matters with any of the children?	1	2	3
126	How often do you do expect men to do physical exercise or games outside home with any of the children?	1	2	3
127	How often do you expect men to help any of the children with their homework?	1	2	3
128	How often do you expect men to cook or fix food for the children?	1	2	3
129	How often do you expect men to wash clothes for the children?	1	2	3

The next set of questions are about who makes decisions in your family. In these questions we ask about family and by this we mean the people with whom you live now. We are going to read some questions and ask you who contributes to making different decisions:

130	Do you have a partner that you do not live with?	Yes.....….1 No.....……..……...0

131	Who is the head of your household?	Yourself……...1 Your partner..……2 Father…….....3 Mother……..……4 Grandfather…….....5 Grandmother……6 Other female relative……..……..7 Other male relative……..….8 Other ……..……..9 No one (all decisions are democratic) ……10
132	Who in your family usually has the final say regarding the health of women or children at home?	Yourself…….……...1 Your partner..……..…….2 Yourself / spouse/partner jointly……..3 Someone else……4 You and someone else jointly……..……5 No women or children at home……6
133	Who in your family usually has the final say in large household purchases?	Yourself…….……...1 Your partner..……..…….2 Yourself / spouse/partner jointly……..3 Someone else……4 You and someone else jointly……..……5 No women or children at home……6
134	Who in your family usually has the final say in daily household purchases?	Yourself…….……...1 Your partner..……..…….2 Yourself / spouse/partner jointly……..3 Someone else……4 You and someone else jointly……..……5 No women or children at home……6
135	Who in your family usually has the final say regarding visiting family friends or relatives?	Yourself…….……...1 Your partner..……..…….2 Yourself / spouse/partner jointly……..3 Someone else……4 You and someone else jointly……..……5 No women or children at home……6
136	Who in your family usually has the final say on what food should be cooked each day?	Yourself…….……...1 Your partner..……..…….2 Yourself / spouse/partner jointly……..3 Someone else……4 You and someone else jointly……..……5 No women or children at home……6

The information you have given us is very important. There are now a few more questions about your relationships with your current partner or any previous partner. Please answer freely, we really want to learn more about people who provide post-rape care and we know we may be asking about things that are hard to talk about, but it is important for us to do this. Please can you share with us the answers to these questions and remember that everything you share here will only be used for research purposes and will be kept strictly confidential. <u>THERE ARE SPECIFIC QUESTIONS FOR MEN AND WOMEN. ONLY COMPLETE THE SECTION RELEVANT TO YOUR SEX</u>

FOR MEN:		
137	How many times have you slapped a partner, pushed or shoved her or thrown something at her which could hurt her?	Never……1 Once……..2 More than 1 time……..3
138	How many times have you hit a partner with a fist or kicked her or hit her with something else which could hurt her?	Never……1 Once……..2 More than 1 time……..3
139	How many times have you threatened to hurt your partner or use a weapon against her?	Never……1 Once……..2 More than 1 time……..3
140	Have you done any of these things in the last 12 months?	Never……1 Once……..2 More than 1 time……..3
141	Have you ever had sex with a woman after you tricked her in some way?	Never……1 Once……..2 More than 1 time……..3
142	Have you ever had sex with a woman after you told lies, threatened to end the relationship, or pleaded with her until she agreed?	Never……1 Once……..2 More than 1 time……..3
143	Have you ever slept with a woman or girl when she didn't consent to sex or after you forced her? How many times has this happened?	Never……1 Once……..2 More than 1 time……..3
144	Was there an occasion when you slept with a woman or girl, other than your girlfriend at the time, when she was too drunk to say whether she wanted it or not?	Never……1 Once……..2 More than 1 time……..3
FOR WOMEN:		
145	How many times have you been slapped by a partner, pushed or shoved or had something thrown at you which could have hurt you?	Never……1 Once……..2 More than 1 time……..3
146	How many times have you been hit by a partner with a fist or kicked or hit her with something else that could have hurt you?	Never……1 Once……..2 More than 1 time……..3
147	How many times has your partner threatened to hurt you or use a weapon against you?	Never……1 Once……..2 More than 1 time……..3
148	Have you experienced any of these things in the last 12 months?	Never……1 Once……..2 More than 1 time……..3
149	Have you ever been tricked in some way to have sex with a man?	Never……1 Once……..2 More than 1 time……..3
150	Have you agreed to have sex with a man after he told lies, threatened to end the relationship, or pleaded with you until you agreed?	Never……1 Once……..2 More than 1 time……..3
151	Have you ever had sex with a man when you didn't consent to it or after you were forced to? How many times has this happened?	Never……1 Once……..2 More than 1 time……..3
152	Was there an occasion when you slept with a men or boy, when you were too drunk to say whether you wanted to or not?	Never……1 Once……..2 More than 1 time……..3

Thank you very much for your participation in the study

ANNEXURE B. STUDY 2: MULTIPLE-CHOICE QUESTIONS FOR HEALTH CARE PROVIDERS

EXPLORING THE IMPLEMENTATION OF A SEXUAL ASSAULT CARE PRACTITIONERS' TRAINING CURRICULUM WITHIN THE CONTEXT OF THE BROADER HEALTH CARE SYSTEM

PRE-INTERVENTION

MULTIPLE CHOICE QUESTIONS

PLEASE CROSS YOUR RESPONSES ON THE ANSWER SHEET PROVIDED

CORRECT ERRORS CLEARLY

THERE IS ONLY **ONE** CORRECT ANSWER PER QUESTION

1. Which of the following statement(s) is true?

a. Hepatitis B vaccination given after sexual assault reduces the risk of getting hepatitis B from the assault
b. There is no evidence of sexual transmission of hepatitis B but there is a risk of acquisition from blood in sexual assault
c. It is important to find out if a person has anti-bodies to hepatitis B before giving a first vaccination dose
d. All survivors should be immunised unless their tests show they are positive to HBsAg, Anti-HBc and Anti-HBs

2. Martha, a 26 year-old woman living in Hillbrow was raped by two perpetrators. Gang rape is more frequently reported to police in South Africa than other countries.
What proportion of rape cases reported to police in South Africa have multiple perpetrators?

a. 56%
b. 46%
c. 26%
d. 16%

3. The rationale for trauma focused cognitive behavioural therapy for rape survivors using prolonged exposure techniques is that:

a. It enables us to think about trauma whilst doing breathing exercises and this reduces our anxiety
b. Revisiting trauma in a safe environment allows for emotional processing which provides new insights and decreases anxiety
c. Revisiting events leads to identifying interpretations that must be changed and thoughts that must be stopped
d. How we feel is influenced by what we think and if we reflect on trauma we can reduce anxiety by identifying and changing thoughts

4. A 22 year old women presents to the health care facility. She has been raped by a stranger last night. Her last menstruation was three weeks ago and she is medically well. The emergency contraceptive regimen of choice for her is:

e. Norlevo 2 tabs (levonorgestrel 1500μg) stat po
f. Ovral 4 tabs (ethinyl estradiol 100μg/levonorgestrel 500μg) stat po
g. Nordette 2 tabs (ethinyl estradiol 125μg/levonorgestrel 300μg) stat po
h. Triphasil 4 tabs (ethinyl estradiol 125μg/levonorgestrel 500μg) stat po

5. An 18 year old girl has been raped by a neighbour. The suspect was arrested on the scene. There are rumours in the community that he is HIV positive. The Criminal Law (Sexual Offences and Related Matters) Amendment Act of 2007 has some stipulations regarding the testing of an accused for HIV.

Which one of the following statements is true?

a. Health care providers are legally obligated to provide pre-test HIV counselling for an accused
b. The parents of the girl can request that the accused be tested for HIV without her consent
c. An investigating officer can request that the accused be tested for HIV without the survivor's consent
d. HIV testing can be conducted in any health care facility that has a laboratory

6. In post-rape mental health care:
   a. It is important to identify all of a survivor's problems and symptoms of post traumatic stress disorder and work separately on each one
   b. It is important to do nothing to increase the survivor's level of anxiety at any stage
   c. Treating the post traumatic stress disorder will lead to a wide range of symptoms being reduced so they do not all need individual solutions
   d. Survivors can be told the best way to avoid anxiety is to avoid situations and exposures that remind them of the rape

7. You see a 25 year old woman survivor who has been raped a few hours ago by men who had targeted her because she is a lesbian. The best approach to pregnancy testing is:
   a. To tell her you would like to do a pregnancy test because it is the policy to do this on all women of reproductive years
   b. To tell her she does not need a pregnancy test because she is a lesbian
   c. To test her for pregnancy without telling her to avoid having to explain why you have done it
   d. To test her and explain its because she could have become pregnant from the rape

8. In suspected sexual assault cases, consent can be granted by the following people:
   a. A child of 12 years for a medical examination
   b. From a magistrate for the collection of evidence from an elderly survivor with living relatives
   c. A police commissioner for the examination of a child when a magistrate is available
   d. A suspect who signs a SAP 308(a) form for the collection of evidence

9. When assessing survivors after sexual assault, it is very important to:
   i. Identify those with other problems such as major depression or substance use that need treatment first
   ii. Identify those with particularly strong and debilitating ideas of self-blame or very high anxiety levels that may need different treatment
   iii. Identify those with intrusive symptoms such as flashbacks and nightmares as they can be harmed by prolonged exposure therapy
   iv. Identify those who are suppressing memories of trauma as imaginal exposure will not work with them

Answers:
   a. i & ii
   b. i & ii & iii
   c. i & ii & iii & iv
   d. iii & iv

10. A school teacher has sex with a 15 year girl who has mild mental impairment. Her mother brings her to the health care facility 2 days later. The Criminal Law (Sexual Offences and Related Matters) Amendment Act of 2007 stipulates the obligations of health care providers.

Which of the following statements regarding their obligations are true?

i. Provide advice to survivor on the transmission of tetanus
ii. Report sexual offences against children and the mental impaired
iii. Provide PEP to survivors of sexual assault
iv. Provide advice to survivors on the transmission of sexually transmitted infections

Answers:

a. iii & iv
b. ii & iii & iv
c. i & iii & iv
d. i & ii & iii & iv

11. Piet has been married to his wife Paula for nine years. About eighteen months ago, he has lost interest in sex and has experienced difficulty sustaining an erection. He now avoids intimacy as much as possible. He feels lost and doesn't know what to do. If Piet could exercise his sexual rights he could improve his quality of life.

All his sexual rights are important. However, exercising which one of his sexual rights could most improve his situation?

a. The right to access information education, and counselling on human sexuality and sexual health
b. The right to choose when and with whom to have sexual relations
c. The right to be free from fear of, or actual perpetration of sexual violence or any form of pressure to have unwanted sexual relations
d. The right to privacy and confidentiality

12. A recent study of rape dockets in Gauteng investigated the use of force and resistance during rape. The study found that:

a. Most women do not resist during rape in any way
b. Most women fight back physically
c. Most women shout or scream for help
d. Most women resist in non-verbal and non-physical ways

13. Health care providers know that there are a few indicators that are diagnostic of sexual assault in children.

Which one of the following is such an indicator?

a. Presence of semen on a 13 year old boy
b. Confirmed syphilis in a six month old girl
c. Penile discharge in a 3 year old boy
d. Confirmed gonorrhea in a one year old boy

14. Emma describes herself as transgendered. Which one of the following definitions most accurately describes what the term "transgendered"?

e. She is romantically and sexually attracted to both women and men
f. She is confused about her sexual orientation and thinks she might be attracted to women
g. She is a person born with a combination of male and female reproductive organs
h. She was born with a male body but has started sexual reassignment surgery so that her body matches her gender identity

15. John is a 20 year old male. As he was returning from a party on campus, he was robbed and anally penetrated. John arrives at the health care facility as he has anal injuries. He is embarrassed and does not wish to report the assault to the police. You would like to inform John of his options to receive care.

His options include:

i. Having evidence collected and stored for 3 days at the facility
ii. Having a J88 form completed at the time
iii. Opening a police case a month later
iv. Receiving counselling and follow up care

Answers:

a. ii
b. ii & iii
c. i & iii
d. ii & iii & iv

16. Which of the following statement(s) are true:

a. A survivor who presents after rape with a lengthy period of amenorrhoea or known pregnancy does not need further pregnancy related management
b. Combined oral contraceptives are better emergency contraceptives because they are stronger and give better pregnancy protection
c. The progestogen-only pill is the emergency contraception treatment of choice
d. It is important to establish how recently emergency contraception has been taken before prescribing it as it is dangerous to use it often

17. Young children who have been sexually assaulted most commonly exhibit which of the following:

a. Show inconsolable crying and have severe nightmares
b. Express a great deal of anger at home and often act out sexualised play
c. Are very withdrawn and often stop play
d. Show few or no behavioural changes

18. Which one of the following does the survivor have a legal right to?

a. Stop a criminal case from proceeding
b. Open a civil case against a perpetrator as well as lay a criminal charge
c. Make decisions regarding the witnesses that would be called in a criminal case
d. Motivate for the life sentence in a civil case

19. Dr Jina did not give a female rape survivor emergency contraceptive.
She made the right decision because the survivor was:

a. A 13 year old virgin with Tanner stage 3 breast development
b. A woman who declined as she had a Depo injection 2 months ago
c. A lesbian who has never had sex with a man
d. Raped by a perpetrator who used a condom

20. Which one of the following answers is correct?

a. A woman should repeat her dose if she vomits 3 hours after having taken her EC
b. A woman who presented to the facility 4 days after the assault should not receive emergency contraception
c. A woman who is using rifampicin should receive a double dose of emergency contraceptive
d. A women who has breast cancer should not receive combined emergency contraception

21. The standard regimen to treat sexually transmitted infections in a 32 year old male survivor includes:

a. Doxycyclin 100mg bd po for five days
b. Ofloxacin 1g stat po
c. Metronidazole 2g stat po
d. Ciprofloxacin 1g stat po

22. According to the Criminal Law (Sexual Offences and Related Matters) Amendment Act of 2007:

a. A child of 16 years can consent to kissing another child of 18 years
b. A child of 14 years can consent to kissing another child of 16 years
c. A child of 13 years can consent to kissing another child of 16 years
d. A child of 11 years can consent to kissing another child of 13 years

23. Countertransference occurs when:

e. Health care providers experience symptoms of trauma themselves from work with trauma survivors
f. Health care providers bring into their work with patients aspects of their own past history
g. Health care providers become very judgmental and unsympathetic
h. Health care providers working with trauma survivors develop burn out

24. The survivor you are examining is a 4 year old girl who was brought in after her mother found her with a teenage male cousin who was very clearly pulling up trousers and closing his zip. You examine her and there are no genital injuries. Which of the following do you do?

i. Reassure her mother there is no signs of penetration so she will not be at risk of HIV and does not need post exposure prophylaxis
ii. Reassure her mother that without penetration she does not need treatment for sexually transmitted infections
iii. Do a vaginal swab and collect blood for syphilis, herpes, hepatitis B, HIV and urine for Chlamydia
iv. Give her an anti-tetanus injection
v. Provide post exposure prophylaxis and syndromic treatment for sexually transmitted infections

Answers:

a. i & ii & iii & iv
b. i & ii & iii
c. iii & v
d. iv & v

25. Parents of sexually abused children should be told to:

a. Show a lot of indulgence towards the child's behaviour so they really know it was not their fault and that they are not bad children, and protect them as much as possible from further trauma by trying not to talk about the assault
b. Take care not to panic the child by showing a great deal of overt distress
c. Keep the abuse secret so the child is not stigmatised
d. Demonstrate as much empathy as possible with the child by not hiding their grief and anger regarding the assault

26. Dr. Jewkes did not give a 20 year old female rape survivor a Hepatitis B vaccination. This was acceptable because:

a. The survivor thinks that she was fully immunised for hepatitis B as a child
b. The survivor was pregnant at the time of the examination
c. Dr Jewkes collected blood to confirm the survivor's hepatitis B immune status
d. The survivor was diagnosed with hepatitis B 2 years ago

27. Sipho is a gay man who lives in Mamelodi in Pretoria. He was severely beaten and raped by two men after leaving a bar in Hatfield. He was taken to Pretoria Academic Hospital. He tells the nurse who is taking his history that he is gay. The first thing that comes to her mind is that he is promiscuous.

The nurse's first thought is an example of:

a. Discrimination
b. A hate crime
c. Gay-bashing
d. A stereotype

28. Dr. Christofides seeks your advice on when to use post exposure prophylaxis in rape cases.
You tell her that it is acceptable in the following cases:

i. To give a survivor a three day starter pack if both screening HIV tests were positive but you are waiting for her confirmatory test from the laboratory
ii. To give a survivor a 28 day course of post exposure prophylaxis if she cannot return for her first HIV results
iii. To give post exposure prophylaxis to an 11 year old survivor who consented for HIV testing
iv. To give post exposure prophylaxis to a 9 year old survivor although her mother has refused to provide consent for an HIV test

Answers:

a. iv
b. iii & iv
c. i & iv
d. ii & iii & iv

29. Which one of the following is part of the correct post exposure prophylaxis regimen?
    a. Lamivudine 600mg daily po is part of the standard regimen
    b. Nevirapine has no side effects and can be use as a third drug of choice for post exposure prophylaxis
    c. Lopinavir 800mg daily po is given to all rape survivors
    d. Replace AZT with d4T in an anaemic survivor

30. There are some new technologies that can be used during the sexual assault examination. Which one of the following statements is correct?
    a. Photographs depicting injuries with use of toluidine blue dye is permissible in court
    b. Colposcopy can help to distinguish between injuries due to consensual and non-consensual intercourse in adults
    c. Secure Digital Forensic Imaging gives equivalent results to colposcopy when recording injuries
    d. The catheter method has been found to be useful in distinguishing hymenal injuries in adult survivors

31. Which of the following statements is false?
    a. Countertransference becomes more of a problem for survivors and services when a whole team suffers from it
    b. Outbursts of anger and a need to be very controlling at work should usually be understood as part of vicarious trauma
    c. A health care provider who is very distrustful of others may be manifesting disordered ideas of trust from vicarious trauma rather than rationally responding to dangers in our society
    d. Countertransference needs to be recognised and worked through to provide good care, its not an excuse for being distrustful, directive or lacking compassion

32. Dr Loots did not collect evidence from a survivor.
This was acceptable because of one of the following reasons. Which one?
    a. The survivor presented 96 hours after the assault
    b. The survivor did not want to report the case to the police
    c. The survivor had a bath before coming to the health care facility
    d. The survivor had intercourse with a consensual partner after the assault and before coming to the health care facility

33. Which one of the following statements is true when considering the examination of sexual assault survivors?
    a. Similar levels of genital injuries are found in survivors who are virgins and non-virgins
    b. Documentation of injuries do not affect the legal outcome of cases
    c. Most genital injuries during consensual intercourse are found in the posterior fourchette
    d. Using the labial traction technique will never injure a survivor

34. Matt is a 31-year-old high-school teacher and coach of the girl's basketball team. He is very attracted to Jody, a feisty 18 year-old student and member of his team. She seems to like hanging out with him. At first they just talked about basketball but then their conversations became more intimate and personal. Although he fought his urges he eventually invited her to his flat a week ago. They drank wine and he told her how sexy she was and how much he wanted to sleep with her. She seemed hesitant but later in the evening agreed.
This is an example of:

a. Consensual sex between two adults
b. Sexual coercion
c. Transactional sex
d. Child sexual abuse

35. Providing survivors with information is a critical part of management after rape. There are many helpful bits of information that need to be communicated during the initial consultation. After rape survivors should be told:

a. Not to drink alcohol to reduce anxiety or help sleep because they will develop substance abuse problems
b. Not to take sleeping pills or they will become addicted
c. Take steps to make themselves feel safer and enhance their own sense of control
d. To take advice from family on safety as their dissociating will stop them from being able to trust their own instincts

36. Which one of the following is definitely indicative of assault in a child?

e. An absent posterior fourchette
f. A hymenal bump
g. A posterior attenuated hymen
h. An anal tag

37. Mary Jane is a 2 year old girl. She has been complaining of genital irritation for the past day. Her grandmother brings her to the health care facility as she suspects that Mary Jane may have been raped.
Which one of the following points would you consider when examining Mary Jane?

a. It is recommended that you examine her under anaesthesia
b. Her parents need to be present to conduct the examination
c. You are not able to view the cervix in young girls
d. Multiple examination positions will be necessary for the examination

38. Keeping rules at home the same after the sexual assault of a child:

a. Is risky as without changes the assault may well re-occur
b. Provides security and continuity with the past
c. Is not really fair as children need space to act out their emotions
d. Will prevent re-victimisation if the rules are strict enough

39. Which one of the following statements is true regarding non-genital injuries?

a. They are less common in obese people
b. They are less common if the force is applied over a longer period
c. They will always occur where the force was applied to the body
d. They are less common if the instrument applying the force is deformed on impact

40. Which one of the following statements is true regarding non-genital injuries?
    a. A serrated-edged knife will always produce a "crinkle-cut" phenomenon
    b. Penetration by a bicycle spoke may simulate a gun-shot injury
    c. A laceration has no tissue-bridges in the wound
    d. A chop wound will not have characteristics of blunt-force injuries

41. After sexual assault, married survivors must be advised to:
    a. Take the resumption of physical contact with their spouse at a pace that feels comfortable even if that means some months without sex
    b. Make sure they don't wait too long without sex or they may well never want it again
    c. Recognise their husband may be jealous and suspicious and be careful to physically reassure him
    d. See having lots of sex as part of exposure therapy and key to reducing sex-related anxiety

42. Once a person recognises they have symptoms of vicarious trauma or burnout they should:
    a. Start therapy or debriefing supervision meetings
    b. Talk about it in therapy or debriefing supervision meetings and reduce exposure until symptoms subside
    c. Recognise its time to stop working with trauma survivors
    d. Take leave for a month

43. Which of the following is an example of good listening?
    e. "So in summary, you were hijacked while on the way home from work…."
    f. "Did you say that you were from Westdene? My grandparents live there"
    g. "Do not worry about the court case. Everything will be fine"
    h. "Let me tell you what to do"

44. When examining children in suspected sexual assault cases, which of the following is true?
    ii. Tanner staging is useful in estimating age of the male survivor
    iii. Tanner staging is useful in estimating the level of oestrogenisation in females
    iv. Susceptibility to being infected with an sexually transmitted infection changes with age
    v. A urinary tract infection in a 5 year old boy in indicative of assault

Answers:
    a. ii & iii
    b. ii & iv
    c. i & iv
    d. i & ii & iii

45. “No person shall be unfairly discriminated against, directly or indirectly, and, without derogating from the generality of this provision, on one or more of the following grounds in particular: race, gender, sex, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture or language”
This excerpt comes from which one of the following documents?

a. Sexual Offences Act
b. South African Constitution
c. Bill of Human Rights
d. Sexual Rights Charter

46. A patient presents 12 hours after being gang raped. Pre-test HIV counselling is carried out but she refuses to have an HIV test
What should the health care provider do?

a. Refuse to give her post exposure prophylaxis
b. Ask the patient to return in 3 days so that she can be pre-test counseled again
c. Provide a 3 day supply of post exposure prophylaxis and ask the patient to come back in 3 days and pre-test counsel again
d. Provide a 7 day supply of post exposure prophylaxis and ask the patient to come back every week for a month for post exposure prophylaxis so that she will have three more opportunities to be pre-test counseled

47. The Forensic Science Laboratory has strict rules regarding the collection of evidence and the use of evidence collection kits in sexual assault cases.
Which one of the following statements is correct?

a. Additional swabs cannot be added to an evidence collection kit as the laboratory cannot afford to analyse more than the specified number of swabs
b. You should not use a paediatric kit for an 11 year old girl who has reached Tanner stage 3
c. You should not collect reference blood specimens at the initial examination as this can be collected as a later date
d. Two evidence collection kits cannot be used on one survivor as the laboratory is unable to link the two kit numbers to a single case

48. Which one of the following statements is true regarding evidence collection in sexual assault survivors?

a. A rectal specimen is valuable because semen can drain from the vaginal cavity
b. You do not have to collect specimens from a survivor who is menstruating
c. Intravaginal specimens can be collected in a child if you can conduct a speculum examination
d. You can collect tissues if they were used to wipe the genital area after the assault

49. In teaching survivors to practice *in vivo* exposure it is a goal that:
    a. Survivors confront all their feared exposures in safety often enough, and stay there long enough, for them to learn no longer to fear them
    b. Survivors confront all their feared exposures in safety e.g. leaving a house with a friend so they know what to do from then on to feel safe
    c. Survivors list all their feared exposures and then identify those that are safe to confront and those that will never be safe (e.g. walking in streets at night) and avoid these
    d. Survivors list all their feared exposures and then rank the anxiety produced by each to better understand the trauma of rape

50. Fazeela is an 18 year old girl who is brought to the health care facility by the police after reporting a rape that occurred one month ago. The police ask you to complete a J88 form. Which one of the following statements regarding the form is true?
    a. You can use abbreviations as long as they are commonly used and accepted
    b. More than one J88 form can be completed for the same survivor
    c. The form does not need to be completed as the rape was only reported one month after the assault
    d. It is important to clearly state in the conclusion that Fazeela was raped

51. The follow up care of a survivor is extremely important. Which one of the following procedures is correct?
    i. The survivor should use condoms until she has her 3 months repeat HIV test
    ii. Repeat HIV tests are done at 4 weeks and 3 months
    iii. The second dose of hepatitis can be given 2 – 3 months after the first dose
    iv. A pregnancy test can be repeated at 4 weeks if the survivor does not get her menstruation after using emergency contraception

    a. i & iii
    b. ii & iii
    c. i & iv
    d. iii & iv

52. Which one of the following statements regarding the presentation of a case in court is true?
    a. The J88 form can be entered into evidence if the health care provider is unavailable
    b. You can discuss the presentation of your case with the survivor
    c. Health care providers can present findings in camera
    d. The accused can cross-examine witnesses

53. Some may argue that males are biologically prone to aggressive behaviour, while others maintain that aggressive and violent behaviour is learnt. Research has shown that while biology may have some role to play in male aggression and risk-taking, socialization of boys plays a major role. The social construction of gender power relations and social norm around gender roles underlie rape.
Which of the following other factor(s) have been found to be associated with male perpetration of rape in South Africa?

i. Boys who are exposed to more trauma in childhood
ii. The abuse of drugs and alcohol
iii. Watching pornographic videos
iv. Men who are poor

a. i & iv
b. i & ii & iv
c. i & ii
d. iii

54. After rape, unless there is treatment, 34-90% of survivors will develop post traumatic stress disorder symptoms. Which of the following statements about recovery is true?

a. All will recover a great deal over the coming weeks and months with social support
b. A third will remain symptomatic over a year later
c. Survivors never recover
d. Most have to learn to live with their symptoms long term

55. Which one of the following acts are defined as rape according to Criminal Law (Sexual Offences and Related Matters) Amendment Act of 2007:

a. A 45 year old woman who coerces a 19 year old boy to have sex with her
b. A 45 year old man who kisses the breasts on a 17 year old girl without her permission
c. A 32 year old man who masturbates his wife without her permission
d. A 24 year old man who forces a vibrator into his girlfriend's mouth

56. Which of the following statements about child sexual abuse are true?

i. Children find it hard to give an account of what has happened so sexual abuse is really diagnosed on clinical findings
ii. Children who have been sexually abused can usually be recognised by their withdrawn or changed behaviour
iii. Sexual abuse in children is determined by the history
iv. It's a myth that boys are just as vulnerable as girls to sexual abuse
v. Sexual abuse of boys is particularly worrying as such a high proportion of abuse perpetrators have been violated themselves

Answers:

a. i & ii & iv
b. i & ii & v
c. iii & iv & v
d. iii & iv

57. In 1996, there were 44 222 completed rape of women reported to the South African police and there were 45 825 reported between 1 April 2003 – 31 March 2004. The rate of rape reported per 100 000 female population was 210 in 1996 and 194 in 2003/4.
Which of the following statements regarding the rate of rapes is the most correct?

a. It has declined
b. It is hard to say without knowing the demographic changes over the period
c. These figures cannot be interpreted without knowing the p value
d. It is impossible to say, most rapes are not reported to the police

58. Vicarious trauma can best be prevented by:

a. Support from colleagues and supervisors
b. Self-care, relaxation and exercise
c. Creating and maintaining professional distance from survivors
d. Organising and mixing workloads to reduce excessive exposure to trauma

59. A 49 year old woman presents to you 35 hours after a rape. Her last normal menstruation was four months ago and she has been suffering from severe hot flushes since then.
The correct management approach would be to:

a. reassure her that she cannot fall pregnant and is now menopausal
b. conduct a pregnancy test to confirm that she is not pregnant
c. provide her with PEP as she is perimenopausal
d. refer her to the gynaecologist for hormone replacement therapy

60. A 3 year old child is brought in by her school teacher. She has bruising on the inner thigh and labia majora. No other injuries are found.
What conclusion would be most appropriate to make on the J88 form?

a. Straddle injury
b. External genital injuries. Lack of internal genital or hymenal injuries cannot exclude penetration
c. Injuries consistent with rape
d. Cause of injuries cannot be ascertained

61. The concept of sexual rights originated in which international document?

a. Human Rights Bill
b. Universal declaration of Human Rights
c. International Conference on Population Development Programme of Action
d. New South African Constitution

62. The rate of rape and attempted rape reported to the South African Police Services in South Africa was 212 per 100 000 women in 1997. In a community-based survey conducted during the same year the estimated rate of rape plus attempted rape was 2 070 per 100 000 women.
How do you account for the difference between these two rates?

i. Police statistics are more accurate and women do not tell the truth when reporting on surveys
ii. Women who are forced to have sex against their will in the context of marriage may not identify that they have been raped or lay a charge
iii. You need to know the total number of rapes perpetrated in a year to understand the magnitude of the problem
iv. Many women do not report rape or attempted rape to the police because they do not believe that their action will result in a conviction

Answers:

a. ii & iv
b. i & ii
c. iv
d. iii

63. According to the Criminal Law (Sexual Offences and Related Matters) Amendment Act of 2007:

a. A magistrate has to consent before HIV testing can be done on an accused
b. A magistrate can request that the accused be tested for HIV if he thinks that it is warranted in a specific case
c. The HIV results of an accused can be used in court even if the survivor withdraws the case
d. The accused is informed of their HIV results and receives post-test counselling

64. Selina, a 34 year old female, who illegally entered the country, was arrested by the police. While in custody she reports that she was raped by a prison official and is brought to the health care facility by a police officer
You would be correct to:

a. inform the police officers if you confirm that there was sexual assault
b. inform the police officers of issues related to the wellbeing of her health
c. not to provide any medical care as she is not a South African citizen
d. examine her without consent as she is a prisoner

65. Josephine, a 45 year old woman, was raped by her ex-boyfriend. She initially did not want to report the rape but presents to the health care facility 2 days after the assault because she has had continuous vaginal bleeding since the assault and is now feeling dizzy. On examination, Josephine looks anaemic and has a blood pressure of 95/55mmHg. You also note a 2cm gash on her scalp that is oozing pus.
What is your primary concern in Josephine's case?

a. Collecting evidence
b. Providing PEP
c. Managing her health needs
d. Providing a tetanus vaccination

66. When talking to a rape survivor, it is important to do which one of the following:
    a. Maintain continuous eye contact
    b. Not say anything while the survivor is talking
    c. Provide strict orders for the survivor's future care
    d. Help survivors develop a plan of action

67. The following emergency contraception is recommended in South Africa for rape survivors:
    i. Intrauterine contraceptive device (IUD)
    ii. Combined contraceptive pill
    iii. Progesterone only contraceptive pill
    iv. Depo provera

    a. i & ii
    b. ii & iii
    c. i & ii & iii
    d. i & ii & iii & iv

68. A woman was raped by her boyfriend 2 months ago. She comes to see you at the health care facility because she has had no menstruation since then. The urine pregnancy test is positive and the survivor tells you that she does not want to terminate the pregnancy.

An appropriate comment at this time would be:
    a. "You must love your boyfriend very much"
    b. "You must be very religious"
    c. "Let us see if we can find out how far is your pregnancy"
    d. "Are you sure about your decision?"

69. The advantage of providing rape survivors with syndromic management for sexually transmitted infections is:
    a. The treatment provides protection for her consensual partners
    b. She can return after one month for her blood results
    c. Infections in the incubation period are treated
    d. That the same script can be used for all ages

70. There is a risk of contracting HIV after a rape. Which of the following statements is true?
    a. HIV risk is highest in non-consensual anal penetration
    b. The survivor has no risk of contracting HIV after 72 hours
    c. It is not necessary to provide PEP if a survivor was raped by her partner
    d. There is no risk of HIV transmission if the perpetrator is on ARVs

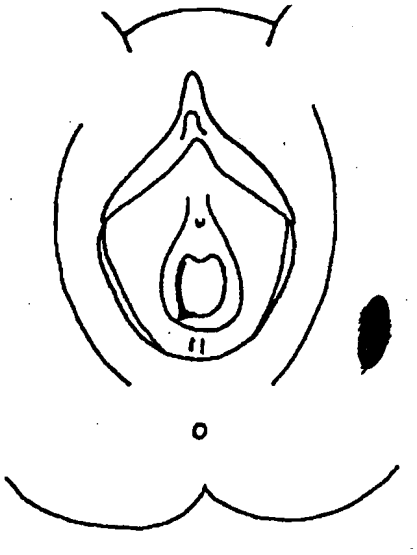
71. Drug-facilitated assaults are becoming increasingly common. Which of the following statements is true?
    a. Specimens to test for drugs must be done on every survivor
    b. Drugs can be detected for the longer periods in blood
    c. The Forensic Laboratory cannot analyse clothes for traces of drugs
    d. Collecting specimens to test for Rophypnol is of no value after 72 hours

72. Regarding the completion of the J88 form:
    a. Photocopies of the J88 form are acceptable in court
    b. Record as much information regarding the assault on the J88 form as this will help you interpret your findings in the future
    c. You can use Tippex to correct errors on the J88 form
    d. It is recommended that two health care providers, who examine the same survivor, complete one J88 form

73. Which of the following statements are true regarding the court process?
    i. Health care providers testify in court to support the survivor's case
    ii. A prosecutor has the right to continue with the prosecution of a case even though a survivor might withdraw the charges
    iii. The prosecutor can help by telling you what to say in court
    iv. A magistrate can discharge an accused before the defence presents its case

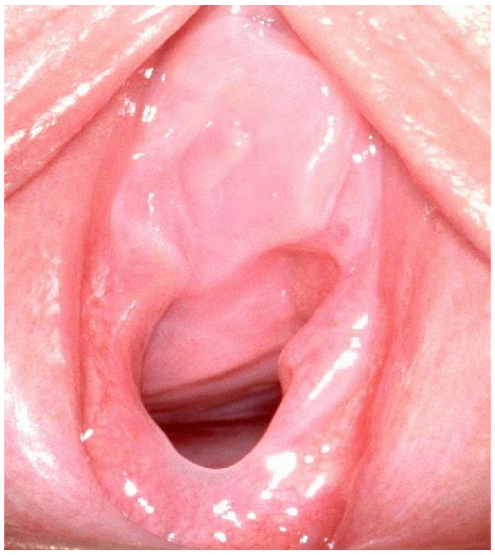
Answers:
    a. i & iii
    b. i & ii
    c. ii & iv
    d. ii & iii

74. A health provider completed the following body diagram on the J88 form.



Which one of the following statements would you expect to be completed in the notes?
    a. Partial tear of the hymen at 7 o' clock, three posterior fourchette tears (1cm) at 6 o' clock and 1.5cm by 3 cm bruise left inner thigh
    b. Partial tear of the hymen at 5 o'clock, two posterior fourchette tears (1cm) at 6 o' clock and 1.5cm by 3 cm bruise left inner thigh
    c. Partial tear of the hymen at 7 o'clock, two posterior fourchette tears (1cm) at 6 o' clock and 1.5cm by 3 cm bruise left perineum
    d. Partial tear of the hymen at 7 o'clock, two posterior fourchette tears (1cm) at 6 o' clock and 1.5cm by 3 cm bruise left inner thigh

75



Which of the following statements is true regarding the colposcopic photograph above?

a. Benign hymenal notch
b. Acute hymenal tear
c. No abnormality
d. Swelling and oedema of the hymen

ANNEXURE C. STUDY 2: ETHICS APPROVAL FOR THE UNIVERSITY OF THE WITWATERSRAND

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Jina

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M071140**
PROJECT	Exploring the Implementation of a Sexual Assualt Care Practitioners' training Curriculum within the Context of the Broader Health Care System
INVESTIGATORS	Dr R Jina
DEPARTMENT	School of Public Health
DATE CONSIDERED	07.11.30
DECISION OF THE COMMITTEE*	APPROVED UNCONDITIONALLY

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application

DATE 08.01.23 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones, A Dhai, M Vorster, C Feldman, A Woodiwiss)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof R Jewkes

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

ANNEXURE D. STUDY 2: INFORMATION SHEET FOR HEALTH CARE PROVIDERS

ASSESSMENT OF A SEXUAL ASSAULT CARE PRACTITIONERS' TRAINING CURRICULUM WITHIN THE CONTEXT OF THE BROADER HEALTH CARE SYSTEM

INFORMATION SHEET FOR SERVICE PROVIDERS

Dear Doctor/Sister

Background
My name is Ms. Lizle Loots. I am from the Medical Research Council, working with the National Department of Health to pilot a training curriculum for sexual assault care providers. As part of the evaluation of the curriculum, we want to look at the organization of rape services in facilities as this may affect the manner in which trained providers function. The research team comprises of myself, Dr. Ruxana Jina, Prof Rachel Jewkes and Ms. Busi Mketo.

I would like to invite you to participate in this study by completing a questionnaire that will gather information on rape and others services in your facility and on your opinions on rape and gender relations. These questionnaires will be completed by a number of service providers working throughout the country. We hope to have at least 162 providers in total complete the questionnaires. If you agree to volunteer, I may also contact you again in a few months time to complete questionnaires and will again request consent from you at that time.

Purpose of this questionnaire
The purpose of the questionnaire is to explore the impact of individual and system-related factors on the provision of sexual assault care. Your participation will be appreciated as it could contribute to our understanding of various aspects about the provision of these services within facilities. The questionnaire will take approximately 30 minutes to complete. Your name will not be recorded on the questionnaire.

What will happen to the information if you agree to volunteer?
Information that is gathered from all of the questionnaires will be combined with other work to evaluate completely the success of the training curriculum. The findings of the study will always be reported in a respectful manner.

Confidentiality
Your name will not be recorded on the questionnaire. I will assist you to develop a code that will be used throughout the study. If you agree to the second and third interview, this code will be used to match your questionnaires. The consent forms and questionnaires will be securely stored at the MRC and access limited to the research team. No facility name or individual name will appear when the findings of the study are reported.

Consent
Participation in the study is voluntary. Your employment in the Department of Health will not be affected whether you agree to participate in the study or not. You may refuse to answer any questions or stop completing the questionnaire at any time. You may also completely withdraw from the study at any time without giving a reason. If you agree to answer the questions please would you read the consent form and sign it to say that you agree to complete the questionnaire.

If you have any further questions you may contact the study me, Ms. Lizle Loots at
Tel: (012) 339 8548, Cell: 079 987 4661
Fax: (012) 339 8582

ANNEXURE E. STUDY 2: CONSENT FORM FOR HEALTH CARE PROVIDERS

INFORMED CONSENT FORM FOR SERVICE PROVIDER INTERVIEWS

I have read the information sheet about the study and had it explained to me.
I understand that I am being invited to participate in this study, and that it is my choice whether I agree to answer the questions or not. I also understand that I have a right to stop answering the questions at any time or may refuse to answer certain questions. I am told that there will be no risk for me to take part or not to take part in the study.

I understand that my confidentiality will be carefully guarded and that no one outside the research team will be able to know what I said.

Do you give consent to complete the questionnaire?

Yes ☐
No ☐

_____ _____

Participant signature Date

ANNEXURE F. STUDY 3. DATA COLLECTION TOOL FOR DATA FROM DOCKETS

TRACKING JUSTICE: RAPE SURVIVORS IN THE CRIMINAL JUSTICE SYSTEM
DATA CODING SHEET

Name of Fieldworker: _____ | |

Date: ___ ___ /___ ___ /___ ___
D D M M Y Y

Initials of person checking form: _____

Questionnaire Number: | | | | |

Police Station: _____ | | | |

[Check that the CAS number and questionnaire numbers match those on the sheet]

When you open the docket you will see lots of different forms. Each form contains different information about the case.

Docket's CR Number _____ (This should be on the front cover of the docket, top right hand corner)

GENERAL INFORMATION			
No.	**Question**	**Coding Categories**	**Skip**
Section 1: Complainant/victim details: Find the form called **PREAMBLE TO THE STATEMENT** you should find the following information on that form. If it is not on this form but in the handwritten victim statement you can use that information to complete this section. You can also use any other form in the docket to find this information **EXCEPT FROM THE J88**.			
1	ID number recorded	Yes……1 No……0	
2	Date of birth recorded	Yes……1 No……0	
3	What is the age of the complainant	[ ] [ ] years Not recorded ……1	
4	If under 18, in whose care was the child at the time of the rape?	Biological mother and father……1 Biological mother only……2 Biological father only……3 Grandparent……4 Sibling……5 Other relative……6 Foster parents……7 School staff member……8 Children's home……9 Other……:……10 Specify: _____ Unknown ……11	
5	What is the race of the complainant?	African (black / swart)……1 Coloured (brown / bruin)……2 White (wit) ……3 Asian……4 Unknown……5	

6	What is the occupation of the complainant?	Unemployed…….....1 Professional: dr., nurse, lawyer, teacher, accountant, social worker, pharmacist.....2 White collar: secretary, office or bank worker, sales person (not shop worker) .....3 Blue collar: factory worker, waitress, employed in a shop .....4 Sex worker ...…….....5 Domestic work/gardening/cook …….....6 Selling/trading or making/growing things to sell .....7 Farm worker …….....8 Student (school/college) ...…….....9 Security industry: police, army, security guard …….....10 Unknown …….....11 Other …….....12 Specify _____	
7	What is the home language of the complainant? RECORDED ON THE PREAMBLE TO THE STATEMENT	Unknown ……0 Xhosa……1 Sotho……...2 Zulu……..3 Tswana……..4 Pedi……..5 Tsonga……..6 Venda……7 English……..8 Afrikaans……..9 Other……...10 Specify:_____	
8	Address recorded	Yes……1 No……..0	
9	Phone number recorded	Yes……1 No……..0	
10	Work address/details recorded	Yes……1 No……..0	
11	Contact person recorded	Yes……1 No……..0	
12	PREAMBLE TO STATEMENT is signed	Yes……1 No……..0	

Section 2: Details of the Rape: Find the form called **STATEMENT** the following information should be on that form. If you find the information on the handwritten victim statement you can use that to complete this section.			
13	Date of the offence: start	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
14	Date of the offence: end	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
15	Time of the offence: start	___ ___:___ ___ H H M M	
16	Time of the offence: end	___ ___:___ ___ H H M M	

17	Day of week that offence took place	Monday ……. 1 Tuesday……. 2 Wednesday……. 3 Thursday……. 4 Friday ……. 5 Saturday ……. 6 Sunday ……. 7	
18	Is the address where the rape occurred recorded (under "Scene of the crime" heading)	Yes……1 No……..0	
19	STATEMENT is signed by the complainant	Yes……1 No……..0	

Section 3: Victim Statement: Look for the **HANDWRITTEN COMPLAINANT/VICTIM STATEMENT.** The handwritten victim statement is an account of the offence. It usually contains details about the rape or attempted rape. DO NOT RECORD INFORMATION FROM THE J88.			
20	Did the police take a statement from the victim/complainant?	Yes ……..1 No ……0	=>22
21	If no, why?	a) Victim too young……a) Yes 1 No 0 b) Victim mentally incapacitated……b) Yes 1 No 0 c) Victim unconscious…… c) Yes 1 No 0 d) Not noted…… d) Yes 1 No 0 e) Other…….e) Yes 1 No 0 Specify: _____	
22	What date was the first statement taken on?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
23	What language was the statement written in?	Unknown …… 0 Xhosa……1 Sotho……..2 Zulu……..3 Tswana……..4 Pedi……..5 Tsonga……..6 Venda……7 English……..8 Afrikaans……9 Other……..10 Specify:_____	
24	Was this the same language the statement was taken in?	Yes ……1 No/Unknown…… 0	
25	Number of perpetrators who had sex with the complainant	[ ] [ ]	
26	Was victim's clothing described fully?	Yes ……1 No…… 0	
27	Was there a description of the perpetrator(s) given by the victim?	Yes ……1 No…… 0	

28	Describe the sequence of events leading up to the rape	[ ] [ ]	
29	Number of perpetrators who were colluding in, but not participating in, the abduction and/or rape?	[ ] [ ] 0 0 if none	
30	Was there anyone else in the same room where the rape was occurring who was not participating **at all** in the rape?	Yes ……1 No/Unknown…… 0	
31	Was there anyone else on the same premises where the rape was occurring who was **not** participating at all in the rape?	Yes ……1 No/Unknown…… 0	
32	Was the victim's state of mind/emotions during the incident recorded in the handwritten statement?	Yes ……1 No…… 0	
33	Did the victim offer any resistance to the rape/abduction?	a) Physically (hitting, scratching, pushing away etc) …..……a) Yes 1 No 0 b) Verbally (screaming, shouting for help etc) ……b) Yes 1 No 0 c) Non-verbally (crying, turning her head away, closing her legs etc) ...……c) Yes 1 No 0 d) Other ……d) Yes 1 No 0 Specify:_____	
34	If no, what was the reason?	[ ] [ ]	

35	Did the complainant attempt to escape/get away:	a) During the abduction …… a) Yes 1 No 0 b) During the rape …….. b) Yes 1 No 0 c) After the rape ……..c) Yes 1 No 0	
36	Relationship between victim and perpetrator	Biological father……1 Stepfather……..2 Foster parent/guardian ……3 Other male relative ……..4 Husband/common law husband/boyfriend……5 Ex-husband/ex-common law husband/ex-boyfriend……6 Friend/acquaintance/ neighbour …….....7 Someone they just met ……8 Supervisor/employer ……9 Work mate/colleague ……10 Priest/church elder ……..11 Teacher/principal/houseparent …… ….12 Healthcare/mental healthcare worker ……13 Policeman ……...14 Stranger/known by sight only ……15 Friend of person victim lives with ……16 Other……...17 Specify: _____ Unknown …… .18	
37	Had the suspect raped the victim on a previous occasion?	Yes ……1 No/Unknown…… 0	
38	Was the victim/complainant abducted (i.e. taken to another place against her will)?	Yes ……1 No…… 0	=> 40
39	If yes, how was she taken?	a) On foot …….... a) Yes 1 No 0 b) By car ……b) Yes 1 No 0 c) Other …….. c) Yes 1 No 0 Specify: _____	
40	Place of rape	Victim's home / residence……1 Victim's workplace…….....2 Perpetrator's home / residence ……..……3 Perpetrator's workplace…….....4 Other residence……..5 In or at transport node…….....6 Road/alley way……7 Open space (veld, bush, park, parking area, sports area, cemeteries, etc.) ….8 Public Toilet……9 Educational/school premises……..10 Police station/cells…….. ……..11 Derelict/abandoned building……..12 Lift……..13 Stairwell……..14 Institution: health facility, psychiatric hospital, children's home .....15 In a car .....16 Other……...17 Specify: _____ Unknown……18	
41	Was the perpetrator or an accomplice armed?	Yes ……1 No…….. 0	=>44

42	If yes, what was the weapon?	a) Knife(s)/panga…… a) Yes 1 No 0 b) Gun(s)……..b) Yes 1 No 0 c) Tools/sharp instrument(s)……c) Yes 1 No 0 d) Blunt instrument(s)……. ……d) Yes 1 No 0 e) Rope…… …e) Yes 1 No 0 f) Other…….f) Yes 1 No 0 Specify: _____ g) Unknown……g) Yes 1 No 0	
43	How was the weapon used?	a) Threaten…….....a) Yes 1 No 0 b) Hurt …….b) Yes 1 No 0	
44	Was bodily physical force used?	Yes ……1 No…… 0	=>47
45	When was bodily physical force used?	a) In the abduction of victim ……a) Yes 1 No 0 b) In the rape itself ……..b) Yes 1 No 0 c) Other ……c) Yes 1 No 0 Specify: _____	
46	What was the nature of the bodily physical force?	a) Strangulation ……..a) Yes 1 No 0 b) Beaten/hit with fists/hands …..…….. b) Yes 1 No 0 c) Kicked…… …c) Yes 1 No 0 d) Pushed /shoved …… .d) Yes 1 No 0 e) Hand over mouth and/or nose …… …….. e) Yes 1 No 0 f) Other ……..…..f) Yes 1 No 0 Specify: _____	
47	Did the perpetrator/ accomplice threaten to kill/hurt/injure the complainant at any point?	Yes ……1 No/Unknown…….. 0	
48	Did the perpetrator give verbal instructions to the victim that were complied with, with no protest?	a) During the abduction ……. …a) Yes 1 No 0 b) To undress ……. …b) Yes 1 No 0 c) To lie down …… …c) Yes 1 No 0	If all no => 50
49	Please specify any other instructions the perpetrator gave to the victim during the course of the rape (this includes from the time he first approached her to the end of the rape). Please list all.	[ ] [ ]	
50	Methods of non-violent coercion employed by perpetrator	a) Offer of sweets/TV/toys/games/treats ..……a) Yes 1 No 0 b) Offer of money…… ...b) Yes 1 No 0 c) Offer of job/promotion …… c) Yes 1 No 0 d) Threat of harm to others……..d) Yes 1 No 0 e) Abuse of power/use of age/authority …….....e) Yes 1 No 0 f) Forced collusion through ‘specialness’……....f) Yes 1 No 0 g) Forced collusion through ‘our secret’……g) Yes 1 No 0 h) Pleading/badgering/verbal coercion……h)Yes 1 No 0 i) Forced collusion through shame, ‘no-one will believe you’ …i) Yes 1 No 0 j) Trickery, false pretences, abuse of trust ……...j) Yes 1 No 0 k) Other ……...k) Yes 1 No 0 Specify: _____	

51	Was the victim or had the victim been doing any of the following immediately prior to rape:	a) Sleeping..……a) Yes 1 No 0 b) Drinking alcohol...……...b) Yes 1 No 0 c) Taking/given drugs ..……...c) Yes 1 No 0 Specify drugs taken/used: _____	
52	Did the perpetrator declare love to the victim at any stage of the rape?	Yes ……1 No/Unknown…… 0	
53	Was there a description of how clothing was removed?	Yes ……1 No…… 0	
54	The victim said "no" to any of the following:	a) Abduction/relocation ……a) Yes 1 No 0 b) Entry to place of rape ……..b) Yes 1 No 0 c) Undressing ……...c) Yes 1 No 0 d) Kissing, touching or petting ……d) Yes 1 No 0 e) Loving perpetrator ……...e) Yes 1 No 0 f) Suggestion of sex ……f) Yes 1 No 0 g) Sex……g) Yes 1 No 0	
55	Penile penetration of vagina occurred	Yes ……1 No/Unknown…… 0	
56	Number of times vaginal penetration occurred between perpetrator and victim in this incident	[ ] [ ]	
57	Perpetrator masturbated	Yes ……1 No/Unknown…… 0	
58	Other acts of sexual assault: Describe	[ ] [ ]	
59	Did the victim wash immediately/soon after the rape (not from J88)?	Yes ……1 No/Unknown…… 0	
60	If it was an attempted rape, what happened to prevent the rape from being completed? [ ] [ ]		
61	Was the HANDWRITTEN VICTIM/ COMPLAINANT STATEMENT signed?	By victim and police officer ……1 By victim only ……2 By police officer only ……3 Not signed ……4	
62	Was the handwritten victim/complainant statement dated?	Yes ……1 No…… 0	

62b	Was an instruction given to have the handwritten victim statement signed and sworn?	Yes ……1 No…… 0	
63	Is there ANY conflict of information between the victim's statement and any other document in the docket?	Yes ……1 No…… 0	=> 65
64	If YES, please specify and list all conflicts.	[ ][ ]	

Section 4: Immediate Actions/Response of Victim and Perpetrator. This will be in the victim's handwritten statement and/or the suspect's statement.			
65	Perpetrator's action/response immediately following the rape	[ ][ ]	
66	Victim's action/response immediately following rape until time of reporting to SAPS	[ ][ ]	

POLICE INVESTIGATION			
Section 5: Reporting to SAPS and witnesses to the rape: The referrals to and from the station will be on the docket cover, investigation diary or CAS numbers. Look at the handwritten victim statement and the first witness report to identify who the complainant first reported the rape to. If there are other witness statements, they will be included in the documents attached to the inside left fold of the document. The investigation diary will contain the various instructions given to the investigating officer.			
67	When was the rape reported to the SAPS?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	

68	Was the report referred from another station?	Yes ……1 No/Unknown…… 0	
69	Was the case referred to a Family violence, Child protection and Sexual offences (FCS/GKS) unit?	Yes ……1 No/Unknown…… 0	
70	After the rape, who was the first person the victim told ("the first witness")?	SAPS……1 Friend……2 Family member (specify):……3 Husband/boyfriend……4 Doctor……5 Stranger…….....6 Other:……7 Specify: _____ Unknown……...8	
71	When did the victim first tell this person that she had been raped?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
72	Did the police take a first witness statement from the person identified in question 70?	Yes…… 1 No…….. …0	=>74
73	When was the first witness statement taken?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
74	Was an instruction issued first before the first witness report was obtained (or not)?	Yes…… 1 No…….. …0	=>77
75	Date instruction was first issued:	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
76	Total no of times instruction issued and/or noted	_____ times	
77	Were there any other witnesses to the rape (this includes the abduction)?	Yes…… 1 No…….. …0	=> 84
78	Did the police take statements from these other witnesses?	Took statements from all the other witnesses……1 Took statements from some of these witnesses……2 Took no statements from other witnesses……..3	=> 80 => 80
79	Witness statements were not taken because:	a)Witnesses disappeared/were untraceable……...a) Yes 1 No 0 b) Identity/names of witnesses unknown……..b) Yes 1 No 0 c) No reason provided/unknown…..……c) Yes 1 No 0 d) Other ……d) Yes 1 No 0 Specify: _____	

80	Was an instruction issued first **before** the other witness statements were taken?	Yes…… 1 No…….. …0	=> 84
81	Date instruction was first issued:	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
82	Total no of times instruction issued and/or noted	_____ times	

83	Date instruction to take a statement from witness finally complied with	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	

Section 6: Identification – you will find this information in the investigation diary or on other forms in the docket.			
84	Did the victim or another witness name the perpetrator?	First name only…….…… ...1 Surname only ……2 Both first name and surname ……3 No…….. ……...0	
85	Did the victim or another witness provide contact details (tel. no and/or address) for the perpetrator?	Yes…… 1 No…….. …0	=>88
86	On what date were these details provided?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
87	If these details were provided, on what date did the police first approach/make contact with the perpetrator?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
88	If the perpetrator was a stranger, or someone the victim just met, did she think she would recognize him if she saw him again?	Yes…… 1 No…….. …0	=> 90
89	Was the victim given a pointing out letter?	Yes…… 1 No…….. …0	
90	Were any of these procedures used to identify the perpetrator, whether he was arrested or not?	a) Identity parade .....a) Yes 1 No 0 b) Set of photographs/Identity kit..... b) Yes 1 No 0 c) Police accompanied victim to identify/point out perpetrator …… c) Yes 1 No 0 d) Other ……d) Yes 1 No 0 Specify: _____	

Section 7: Perpetrator Details – There are three places that you may find details about the perpetrator. The first is in the handwritten witness statement, the second is in the "WARNING" document, the third is on the back of the docket.			
91	There are perpetrator details	Yes…… 1 No……0	=>100
92	Age: perpetrator 1	_____ years Unknown……1	
93	Race: perpetrator 1	African……1 Coloured……2 White……3 Asian……4 Unknown……5	
94	Employment status	Unemployed……1 Professional: dr, nurse, lawyer, teacher, accountant, social worker, pharmacist……2 White collar: secretary, office or bank worker, sales person (not shop worker), messenger ……3 Blue collar: factory worker, waitress, employed in a shop, municipal worker, builder……4 Domestic work/gardening/cook/driver ……5 Selling/trading or making/growing things to sell ……6 Farm worker/ farmer ……7 Student (school/college) ……8 Security industry: police ……9 Security industry: army ……10 Security industry: security guard ……11 Taxi owner/ taxi driver / taxi conductor ……12 Business man: owns a formal company ……13 Car guard ……14 Employed but occupation unknown……15 Unknown……16 Other ……17 Specify: _____	
95	Age: perpetrator 2	_____ years Unknown……1	
96	Age: perpetrator 3	_____ years Unknown……1	
97	Age: perpetrator 4	_____ years Unknown……1	
98	Does the accused have previous convictions	Yes…….. 1 No/Unknown…….. …0	
99	Previous convictions	a) Rape/attempted rape…… a) Yes 1 No 0 b) Murder/attempted murder……b) Yes 1 No 0 c) Culpable homicide……c) Yes 1 No 0 d) Robbery/hijacking……d) Yes 1 No 0 e) Housebreaking/theft…… e) Yes 1 No 0 f) Assault/grievous bodily harm …….. f) Yes 1 No 0 g) Illegal possession of a firearm/ammunition ……g) Yes 1 No 0 h) Other ……h) Yes 1 No 0 Specify: _____	

Section 8: Arrest – You will find some of these details in the **"WARNING"** document, the investigation diary on the back of the docket, as well as statements written by the investigating officer.			
100	Did the perpetrator make a statement to the police?	Yes…… 1 No…….. …0	
101	Was the perpetrator arrested?	Yes…… 1 No…….. …0	=>104
102	Was the perpetrator caught by the police or a witness ...	a) In the act ……a) Yes 1 No 0 b) At the scene of the crime the same day……..b) Yes 1 No 0	
103	On what date was the perpetrator arrested?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
104	If not, what was the reason given?	Perpetrator unknown……1 Perpetrator disappeared…….2 Perpetrator died …….3 Perpetrator already incarcerated ……...4 Victim died……5 Victim withdrew complaint ……..6 Victim disappeared ……...7 Other …….8 Specify:_____ Unknown ….……..9	
105	Was an instruction issued to arrest the suspect **before** the perpetrator was arrested (or not)?	Yes…… 1 No…….. …0	=>108
106	Date instruction was first issued:	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
107	Total no of times instruction issued/noted	_____ times	

Section 9: Collection of evidence ("exhibits"): The middle portion of the docket typically contains information about the analysis of all the material evidence. Also look in the investigation diary which is usually on the right hand-side of the docket. The instructions are usually hand-written and dated.			
108	Did the police go to the scene of the crime?	Yes…… 1 No…….. …0	=> 110
109	When did they go to the crime scene?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
110	Was there an instruction issued to go to the scene of the crime **before** the police went to the scene of the crime?	Yes…… 1 No…….. …0	=>113
111	Date instruction was first issued to go to scene of crime:	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
112	Total no of times instruction issued	_____ times	
113	Did the police collect finger prints?	Yes…… 1 No…….. …0	
114	Were forensic specimens sent to the Forensic Science Laboratory (FSL) in Pretoria?	Yes……..…… 1 No……..…0 No J88 completed …….... 2	=>116 => J88

115	When were the forensic specimens sent to the lab?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
116	Was a blood specimen obtained from the suspect?	Yes……. 1 No……..…0 No J88 completed ……2	=>118 => J88
117	When was the blood specimen sent to the lab?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
118	Was an instruction issued first before forensic specimens were sent to the Forensic Laboratory for DNA analysis (or not sent)?	Yes……. 1 No…….. …0	=>121
119	Date instruction was first issued:	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
120	Total no of times instruction issued/noted	_____ times	
121	Was the forensic evidence ever lost, damaged or destroyed?	Yes……. 1 No…….. …0	

Section 10: DNA evidence: This will be found in a report from the Forensic Science Laboratory, Pretoria			
122	Is there a report from the Forensic Science Laboratory in Pretoria?	Yes……. 1 No……..…0	=> J88
123	Was DNA evidence found on a genital swab?	Yes……. 1 Specify which one: _____ No……..…0	
124	Was DNA evidence found on an ano-rectal swab?	Yes……. 1 No……..…0	
125	Was DNA evidence found on a sanitary towel/tampon?	Yes……. 1 No……..…0	
126	Was DNA evidence found elsewhere?	Yes……. 1 Specify: _____ No……..…0	
127	Was DNA evidence found on panties?	Yes……. 1 No……..…0	
128	Did STR-profile obtained from the swab match the STR-profile of suspect (control blood sample for XY)?	Yes……. 1 No/ Unknown ……..…0	

Section 11: MEDICO-LEGAL EXAMINATION

REPORT BY AUTHORISED MEDICAL PRACTITIONER ON THE COMPLETION OF A MEDICO-LEGAL EXAMINATION

(J88)

To be completed in legible handwriting and signed on every page

1

A **DEMOGRAPHIC INFORMATION**

1. Police station	2. CAS number **DO NOT COPY XXX XXXXXXXXXXXXX X**	3. Investigating Officer Name and Number **DO NOT COPY NAME or NUMBER XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XX**	4.Time Day Month Year ☐☐ ☐☐ ☐☐ ☐☐ ☐☐☐☐

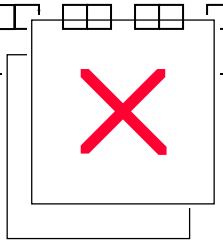
5. Name of Medical Practitioner **DO NOT COPY XXXXXXXXXXXXXXXXXXXXXXXXXXXX**

6. Registered qualifications

7. Phone number **DO NOT COPY**
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

8. Fax number **DO NOT COPY**
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

9. Place of examination



or stamp

address or stamp

11. Full names of person examined **DO NOT COPY NAME** 12. Sex M ☐ F ☐ 13. Date of Birth/Apparent age

DOES FIRST NAME MATCH FIRST NAME ON DOCKET? YES 1 NO 0

DOES LAST NAME MATCH LAST NAME ON DOCKET? YES 1 NO 0 **AGE ONLY**

B **GENERAL HISTORY**

1. Relevant medical history and medication

C **GENERAL EXAMINATION**

1. Condition of clothing

2. Height	3. Mass	4. General body build

5. Clinical findings in every case the nature, extent of the abrasion, wound or other injury must be described and noted together with its probable date and manner of causation. The position of all injuries and wounds must also be noted on the sketches

6. Mental Health and emotional status

7. Clinical evidence drugs and alcohol

8. **CONCLUSIONS**

10. Signature of Medical Practitioner
(Circle yes if there is a signature and no if there is not)

Yes 1 No 0

Form 7.2: Form J88

D **HISTORY IN CASE OF ALLEGED SEXUAL OFFENCE** **2**

1. Age of menarche ☐☐	2. Number of pregnancies ☐☐	3. Number of deliveries ☐☐	4. Duration of pregnancy (if applicable) ☐☐ weeks

5. Contraception (indicate with X) Yes ☐ No ☐ 7. First date of last menstruation

6. Method and last date of application/ingestion 8. Duration of period ☐☐ 9. Duration of cycle ☐☐

10. Date and time of last intercourse with consent	11. Number of consensual sexual partners during last 7 days	12. Condoms Yes ☐ No ☐

13. Since the alleged offence took place, has the person (indicate with X) bathed ☐ washed ☐ douched ☐ showered ☐ urinated ☐ changed clothing ☐

E **GYNAECOLOGICAL EXAMINATION (State clinical findings)**

1. Breast development: Tanner stage 1 - 5 ☐	2. Pubic hair: Tanner stage 1 - 5 ☐	3. Mons pubis
4. Clitoris	5. Frenulum of clitoris	
6. Urethral orifice	7. Para-urethral folds	
8. Labia majora	9. Labia minora	

10. Posterior fourchette: scarring: bleeding: tears: increased friability:

11. Fossa navicularis

12. Hymen: configuration 13. Opening diameter (mm): Transverse ☐☐ Vertical ☐☐

14. Swelling 15. Bumps 16. Clefts

17. Fresh tears (position) 18. Synechiae 19. Bruising

20. Vagina: Number of fingers admitted bleeding: tears: discharge:

21. Cervix: erosion: discharge: bleeding: other:

22. Perineum

F **SAMPLES TAKEN FOR INVESTIGATION**

1. Forensic specimens taken: Urine sample for pregnancy test Positive ☐ Negative ☐ Seal number of Evidence Collection Kit: **Yes 1 No 0**

2. Specimens handed to: Name: **Yes 1 No 0** Rank and force number: **Yes 1 No 0**

Signature: **Yes 1 No 0**

3. **CONCLUSIONS**

10. Signature of Medical Practitioner **Yes 1 No 0**

Form 7.2: Form J88

G **ANAL EXAMINATION (State clinical findings)** **3**

SKIN SURROUNDING THE ORIFICE

1. Hygiene
2. Pigmentation
3. Fissures / cracks
4. Abrasions
5. Scars
6. Swelling / thickening
7. Redness / erythema
8. Bruising / haematoma
9. Tags

ORIFICE

10. Tears / fissures
11. Swelling / thickening of rim (tyre sign)
12. Funnelling
13. Reflex dilatation
14. Shortening / eversion of anal canal
15. Cupping
16. Twitchiness / winking
17. Discharge

DIGITAL EXAMINATION

18. Presence of hard faeces in rectum
19. Laxity (pressure on anal orifice)
20. Thickening of anal verge
21. Tone (sphincter grip)

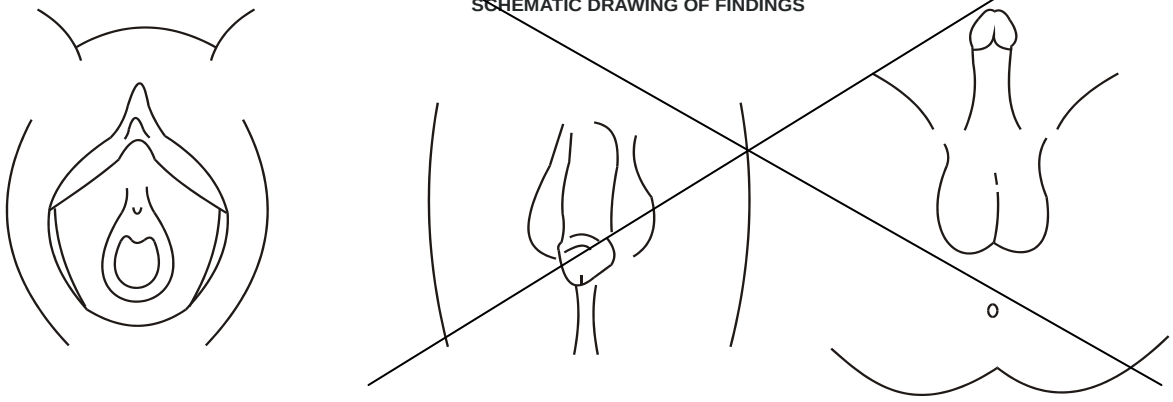
22. **CONCLUSIONS**

H **MALE GENITALIA**

1. Genital development: Tanner stage 1 - 5 ☐
2. Glans
3. Testes
4. Ulceration
5. Presence of faeces
6. Pubic hair: Tanner stage 1 - 5 ☐
7. Shaft
8. Epididymus
9. Penile discharge
10. Circumcision
11. Prepuce and frenulum
12. Scrotum
13. Vas deferens
14. Smegma
15. Urethral orifice

16. **CONCLUSIONS**

SCHEMATIC DRAWING OF FINDINGS



10. Signature of Medical Practitioner

Yes 1 No 0

Section 12: Withdrawals. Police investigation stage - Cases may be withdrawn by both the police and the prosecution. If the case was withdrawn by the police, then there will be only an SAPS stamp in the bottom left hand corner of the front of the docket. If it was withdrawn by the prosecution there should be a second stamp for the prosecution services above the police stamp. This first section refers to withdrawals at the investigation stage (where there is only the police stamp). To find this information read the investigation diary, the front of the docket and the statements attached to the inside left cover.			
129	Did the police withdraw the matter?	Yes……..1 No…….. ……...0	=>133
130	On what date was the charge (case) withdrawn?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
131	Why did the police withdraw the charge?	Perpetrator untraceable ……1 Victim untraceable (has left address given to SAPS).. ……....2 No evidence of rape… ……. ……...3 False allegations …….....4 Victim too traumatised ……5 Pressure from victim's guardian/caregiver /parent ……..6 Families of accused and victim have resolved the matter……7 Victim and accused have resolved the matter ……..8 Victim wants to get on with her life……..9 Docket lost ……..10 Other …….....11 Specify: _____ Unknown ……12	=>133 =>133 =>133 =>133 =>133 =>133 =>133 =>133 =>133 =>133
132	The victim was said to be untraceable because:	a) Does not return calls……a) Yes 1 No 0 b) Moved without leaving her new address……..b) Yes 1 No 0 c) Provided incorrect number/address……...c) Yes 1 No 0 d) Other…….……..……..d) Yes 1 No 0 Specify: _____	
133	How many efforts were made to contact the complainant? (this includes telephone calls as well as visits to addresses)	[ ] [ ] Unknown……2	
134	Date of first attempt to contact/trace the victim	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
135	Date of last attempt to contact/trace the victim	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
136	Was there an instruction issued to contact the complainant?	Yes…… 1 No…….. …0	=>138
137	Total no of times instruction issued/noted	_____ times	
138	Was a withdrawal statement included in the docket (this should have been made by either the police or the victim, or her parents/guardian?)	Yes……..1 No……...0	
139	If it was said that the allegation was unfounded/false, what was the reason given for making a false allegation?	a) Victim said she is a sex worker……a) Yes 1 No 0 b) Victim says she was not paid……b) Yes 1 No 0 c) Victim having illicit sex with someone she should not…….c) Yes 1 No 0 d) Other .....……..d) Yes 1 No 0 Specify: _____	

140	Please write your comments regarding the false allegation – is there anything else in the docket that suggests the victim may have been pressurised into saying it her allegation was false		

Section 13: State declines to prosecute, or "nolle prosequi" (this happens after the police have referred the case to the NPA but before the trial has started). If there is a second stamp on the front of the docket from the courts/prosecution services, then this means that they are responsible for the decision not to continue. You might also have to read the investigation diary as well to double-check this.			
141	Did the NPA decline to prosecute the matter after they received the docket from the police?	Yes…… 1 No…….. …0	=>144
142	On what date was this decision made?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
143	What was the reason for declining to prosecute?	Insufficient evidence ……1 Unlikelihood of obtaining further evidence……..2 Wrong accused……..3 Complainant disappears…….4 Docket lost…….5 Witness(es) disappear……6 False report……7 Complainant declines to co-operate……..8 Guardian of minor complainant unwilling to co-operate……..9 Assessment that complainant is an incompetent witness ……...10 Families of accused and victim have resolved the matter……...11 Victim and accused have resolved the matter ……12 Victim wants to get on with her life……13 Other …….…… ……14 Specify: _____ Unknown…….15	

COURT PROCESSES			
Section 14: Charges [THIS REFERS TO WHEN THE SUSPECT IS FORMALLY CHARGED IN COURT]			
144	On what date was the accused charged in court?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
145	What was the accused charged in court with in connection with the rape?	Rape ……1 Attempted Rape ……...2	
146	Number of other charges brought against the accused?	[ ] [ ] 0 0 if none	If none => 148

147	Specify the other charges brought against the accused?	a) Robbery……a) Yes 1 No 0 b) Hijacking……..……b) Yes 1 No 0 c) Attempted murder…… ……c) Yes 1 No 0 d) Abduction…….. ……d) Yes 1 No 0 e) Pointing a firearm……..e) Yes 1 No 0 f) Assault ……f) Yes 1 No 0 g) Other ……..g) Yes 1 No 0 Specify: _____	

Section 15: Bail			
148	On what date was the bail hearing?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
149	Is a bail statement included in the docket?	Yes……. 1 No…….. …0	
149 b	What did the Investigating Officer recommend?	[ ] [ ]	
150	Did the investigating officer oppose bail?	Yes……. 1 No…….. …0	
151	Was the accused granted bail?	Yes……. 1 No…….. …0	=>154
152	How much was bail posted at?	R_____	
153	What were the conditions attached to the bail?	a) None……a) Yes 1 No 0 b) No contact with complainant…….. ……b) Yes 1 No 0 c) Report to police station at specific times……. ……...c) Yes 1 No 0 d) Not to leave the province/country……...d) Yes 1 No 0 e) Not to destroy or interfere with evidence…… ……...e) Yes 1 No 0	

Section 16: Plea and sentence agreements (Plea bargains)			
154	Was a plea and sentence agreement entered into?	Yes……. 1 No…….. …0	=>157
155	If yes, what did the perpetrator plead guilty to?	a) Attempted rape……..…… a) Yes 1 No 0 b) Indecent assault…….…… b) Yes 1 No 0 c) Common assault……... ……c) Yes 1 No 0 d) Sex with a minor ……...d) Yes 1 No 0 e) Other ……e) Yes 1 No 0 Specify: _____	
156	What was the sentence handed down?	a) Fine……a) Yes 1 No 0 b) Prison sentence……...b) Yes 1 No 0 c) Suspended prison sentence……. ……...c) Yes 1 No 0 d) Correctional supervision……. ……..d) Yes 1 No 0 e) Other ……e) Yes 1 No 0 Specify: _____	

Section 17: Venue of Trial [Check list of specialist sexual offences courts in manual]			
157	At what court was the trial held?	Regional court……..1 High court……2 Specialist Sexual Offences facility……...3	
158	Name of court?	[ ] [ ]	

Section 18: Plea			
159	What plea did the accused enter for the rape?	Guilty……1 Not guilty……2 Did not plead……3	

Section 19: Dismissals and withdrawals from the court roll – this is different to the police withdrawing the charge or the prosecution declining to prosecute ("nolle prosequi"). This refers to when the prosecutor withdraws the case for further investigation. Check the investigation diary for comments from the prosecutor to the detective (IO/OB).			
160	Did the prosecutor withdraw the case from the roll at any stage?	Yes……. 1 No…….. …0	=>164
161	Date when the prosecutor withdrew case from roll	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
162	If the prosecutor withdrew the matter, was it placed back on the roll?	Yes……...1 No/Unknown…….. …0	END
163	Date matter was placed back on the roll	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
164	Did the magistrate dismiss the case or strike it from the roll at any stage?	Yes…….. 1 No/Unknown…….. …0	=>169
165	Why was the case dismissed or struck off the role?	Docket lost……1 Complainant failed to appear in court……..2 Witness(es) failed to appear in court……3 Witness(es) not summonsed/subpoenaed……4 Other……..…….5 Specify: _____ Unknown……6	
166	On what date was the case dismissed or struck off the roll?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
167	If the matter was dismissed or struck from the roll, was it placed back on the roll?	Yes……. 1 No…….. …0	END
168	Date matter was placed back on the roll	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	

Section 20: Witnesses			
169	Which prosecution witnesses were served with subpoenas?	a) Victim……a) Yes 1 No 0 b) Witness to rape……..b) Yes 1 No 0 c) First report witness…….. ……..c) Yes 1 No 0 d) Medical expert……d) Yes 1 No 0 e) Intermediary……e) Yes 1 No 0 f) Parent/guardian……f) Yes 1 No 0 g) Other expert……....g) Yes 1 No 0 Specify: _____ h) Police……..h) Yes 1 No 0 i) Other ……..……...i) Yes 1 No 0 Specify: _____	

Section 21: Outcome of case			
170	On what date did the court reach a decision?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
171	In relation to the rape charge, was the accused found:	Guilty……..……1 Not guilty/acquitted……..2 Discharged in terms of Section 174……..…..……..3 Matter stopped by the prosecution in terms of Section 6.…4	
172	If found guilty, of what offence?	Rape……1 Attempted Rape ……..2 Sex with a minor ……3 Other…….……...4 Specify: _____	

Section 22: Sentence for rape alone [do not write down sentence given for any other charges]			
173	On what date was sentence handed down?	___ ___ ___ ___ / ___ ___ / ___ ___ Y Y Y Y M M D D	
174	Was the case transferred to the High Court for sentencing?	Yes……. 1 No…….. …0	
175	What type of sentence did the accused receive?	a) Imprisonment ……a) Yes 1 No 0 b) Correctional supervision……..……..b) Yes 1 No 0 c) Suspended sentence……c) Yes 1 No 0 d) Fine…….....d) Yes 1 No 0 e) Other ……...e) Yes 1 No 0 Specify: _____	=> 176 => 177 => 178 => 179 => 180
176	What was the effective period of imprisonment?	[ ][ ]	
177	How many years of correctional supervision did the accused receive?	[ ][ ]	

178	How many years of the sentence were suspended?	[ ][ ]	
179	What was the amount of the fine?	[ ][ ]	
180	Other	Specify how this is to be served (i.e. attend therapy for three months)	

Section 23: Post-trial			
181	Did the accused appeal against the conviction?	Yes……. 1 No…….. …0	=>183
182	What was the outcome of the appeal?	Conviction upheld……..1 Conviction overturned……2 Appeal still in progress……...3	
183	Did the accused appeal against the sentence?	Yes……. 1 No…….. …0	END
184	What was the outcome of the appeal?	Sentence upheld…….1 Sentence overturned……..2 Appeal still in progress……..3	

Please indicate if you think the police have made a special effort with this case and note down ANY other information in the docket that you found interesting, wanted to comment on etc:

ANNEXURE G. STUDY 3: DATA CODING SHEET FOR MEDICO-LEGAL (J88) FORM

Questionnaire | | | | | Number:

Police Station:

Medico-Legal Evidence		
200	Missing J88	Attempted rape……1 J88 destroyed in court…….2 Reason unknown……3 J88 not completed…….4 Other……5
201	Time J88 completed	[ ] [ ] . [ ] [ ]
202	Date completed	__ __ / __ __ / __ __ __ __ D D M M Y Y Y Y
203	Medical examiner	MBCHB.....1 Higher than MBCHB.....2 MP Registration number …….. 3 Nurse.....4 Other_____.....5
204	Place of examination	Hospital …….....1 Crisis centre …….. 2 Health Centre ……3 Private GP office .....4 Other _____ 5
205	Patient's first name matches name on docket	Yes……. 1 No…….. …0
206	Patient's last name matches name on docket	Yes……. 1 No…….. …0
207	Patient's age matches age on docket	Yes……. 1 No…….. …0 Uncertain…….2
208	**Relevant medical history, medication or disability:**	None recorded……..1→211 Details of rape ……2 →211 Anything relevant mentioned……3 No relevant history……4
209	**Medication:** a) Anti-depressive b) Anti-psychotic Tranquilizer c) Other psychiatric d) Epileptic e) Contraceptive f) HIV-related g) Other _____	 a) Yes……. 1 No…….. …0 b) Yes……. 1 No…….. …0 c) Yes……. 1 No…….. …0 d) Yes……. 1 No…….. …0 e) Yes……. 1 No…….. …0 f) Yes……. 1 No…….. …0 g) Yes……. 1 No…….. …0

210	**Disability:** a) Physical b) Hearing impairment c) Visual impairment d) Intellectual e) Learning disability f) Other _____	 a) Yes……. 1 No…….. …0 b) Yes……. 1 No…….. …0 c) Yes……. 1 No…….. …0 d) Yes……. 1 No…….. …0 e) Yes……. 1 No…….. …0 f) Yes……. 1 No…….. …0
211	Details of the rape are recorded	Yes……. 1 No…….. …0
212	Condition of clothes recorded?	Torn / missing from rape……..…… 1 Good /neat / normal / clean……2 Stained / otherwise dirtied……..…3 Changed……..4 Not reported ……..… 5 Other_____6 (specify)
213	Height	[ ] [ ] [ ] cm
214	Mass	[ ] [ ] [ ] kg
215	General body build	Small……1 Medium/ Average / Normal……2 Large……3 Well built/well nourished…….4 Good……5 Not completed……6 Other_____7 (specify)
216	Emotional state at initial contact:	Tearful/distressed …… 1 Calm/numb …….. 2 Hysterical …… 3 Suicidal …… 4 Normal / good / stable /age appropriate ……..…. 5 Angry ……... 6 Nervous/anxious/ scared / worried……..….. 7 Depressed / withdrawn…… 8 Distracted / slow to answer……9 Not recorded …… 10 Other _____ …. 11
217	Patient was under the influence of alcohol / drugs	Drunk/drugged ……..…… 1 Sober …… 2 Not completed ……..……3

218	General examination conclusions: THIS QUESTION IS ONLY ASKING ABOUT REFERENCE TO RAPE IN THE CONCLUDING STATEMENT	Raped……..……..1 Does not exclude rape / possible rape……..2 Injuries are consistent with history of rape……..….3 No evidence of rape …… 4 Statement makes no reference to rape ……. 5 Only 'alleged rape' stated ……..…….. 6 No concluding statement …… 7 Other …… 8 Specify _____
219	Location of general body injuries:	a) Face……. Yes 1 No 0 b) Eye……Yes 1 No 0 c) Ear……..Yes 1 No 0 d) Mouth…….Yes 1 No 0 e) Head – other……. Yes 1 No 0 f) Neck……. Yes 1 No 0 g) Thorax……Yes 1 No 0 h) Abdomen……. Yes 1 No 0 i) Back……. Yes 1 No 0 j) Buttock/side of pelvis..Yes 1 No 0 k) Upper arm…… Yes 1 No 0 l) Lower arm……..Yes 1 No 0 m) Hand……. Yes 1 No 0 n) Upper leg……. .Yes 1 No 0 o) Lower leg……. .Yes 1 No 0 p) Foot……Yes 1 No 0 q) None……Yes 1
220	Types of injuries IF ANY MENTIONED IN 219	a) Gunshot……Yes 1 No 0 b) Laceration (stab) …… ... Yes 1 No 0 c) Burn …….. Yes 1 No 0 d) Strangulation…….. Yes 1 No 0 e) Scratches/abrasions/tears ……Yes 1 No 0 f) Bruising……..…… Yes 1 No 0 g) Bruising from being tied up...… Yes 1 No 0 h) Tenderness/pain……..…… Yes 1 No 0 i) Scars ? from assault……..Yes 1 No 0 i) Other _____Yes 1 No 0 (specify)
221	Correlations between general body injuries mentioned and diagrams IF ANY MENTIONED IN 219	Complete correlation……1 One difference……2 2-3 differences……3 More differences……4 Nothing marked on diagrams……..5
	History of alleged sexual offence	
222	Age at menarche	[ ] [ ] No menarche…….50
223	Number of pregnancies	[ ] [ ]
224	Was patient using contraception?	Contraception…… 1 No contraception……..…… 2 Menopause / Hysterectomy…….. …. ……3 Not completed ……4
225	Was patient menstruating at time of rape?	Yes LMP = or <day 5…… 1 Yes blood PV……..2 No ……. 3 Not completed ……4

226	Date of last consensual sex	Within 24 hours of rape…… .1 2-5 days before rape…… ..2 6 days- 2 weeks……. …….3 Over 2 weeks but less than 3 months……. ……4 3 months ago or more……. ……5 After rape……..……. ……6 Not completed ……..……...7 Never consensual sex/ Virgin……8
227	Number of consensual partners in last 7 days	[ ]
228	Were condoms used?	Yes …… 1 No …… 0 Not completed ……2
228a	J88 includes "condom used in rape"	Yes …… 1 No …… 0
229 a	All boxes for questions 229 – 234 are blank	Yes …… 1 No …… 0
229	Has the patient bathed since the offence?	Yes …… 1 No …… 0 Not completed ……2
230	Has the patient washed since the offence?	Yes …… 1 No …… 0 Not completed ……2
231	Has the patient douched since the offence?	Yes …… 1 No …… 0 Not completed ……2
232	Has the patient showered since the offence?	Yes …… 1 No …… 0 Not completed ……2
233	Did the patient urinated since the offence?	Yes …… 1 No …… 0 Not completed ……2
234	Did the patient changed clothing since the offence?	Yes …… 1 No …… 0 Not completed ……2
235	Tanner stage breast development	[ ]
236	Tanner stage pubic hair	[ ]
	GYNAECOLOGICAL EXAMINATION	
237	Location of external genital injuries:	a) Clitoris…….... Yes 1 No 0 b) Frenulum of clitoris… Yes 1 No 0 c) Urethral orifice..…….. Yes 1 No 0 d) Para-urethral folds…. Yes 1 No 0 e) Labia majora……. Yes 1 No 0 f) Labia minora……. Yes 1 No 0 g) Posterior forchette….. Yes 1 No 0 h) Fossa navicularis…… Yes 1 No 0 i) Perineum……... Yes 1 No 0 j) None……. Yes 1 No 0

238	Types of injuries IF ANY MENTIONED IN 237	a) Gunshot…… Yes 1 No 0 b) Laceration (stab) …… ... Yes 1 No 0 c) Burn …….. Yes 1 No 0 d) Scratches/abrasions/tears …Yes 1 No 0 e) Bruising……..…… Yes 1 No 0 f) Haematoma……Yes 1 No 0 g) Tenderness……..……...… Yes 1 No 0 h) Scars ? from assault…….Yes 1 No 0 i) Bleeding seen……..…...Yes 1 No 0 j) Redness/ inflammation……. Yes 1 No 0 k) Other_____ Yes 1 No 0 (specify)_____
239	Location of internal genital injuries:	a) Hymen…… Yes 1 No 0 Not done 2 b) Vagina…… Yes 1 No 0 Not done 2 c) Cervix……Yes 1 No 0 Not done 2
240	Types of injuries IF ANY MENTIONED IN 239	a) Gunshot……Yes 1 No 0 b) Laceration (stab) …… ... Yes 1 No 0 c) Burn …….. .Yes 1 No 0 d) Scratches/abrasions/tears ……Yes 1 No 0 e) Bruising……..…… Yes 1 No 0 f) Haematoma……...Yes 1 No 0 g) Tenderness……..…… ..Yes 1 No 0 h) Scars ? from assault……Yes 1 No 0 i) Bleeding seen……..…….Yes 1 No 0 j) Redness/ inflammation……. …Yes 1 No 0 k) Hymen swelling noted……Yes 1 No 0 l) Hymen clefts noted …….……Yes 1 No 0 m) Other_____Yes 1 No 0 (specify)
241	Discharge from vagina/cervix	White…….. 1 Appearance of recent ejaculatory fluid……2 Coloured / offensive…….…….. 3 None……..…4 No mention……..…5 Yes……6
241 a	Evidence of STI	Yes……. 1 No…….. …0
242	Forensic specimen collected – presence of evidence collection kit seal	Yes …….. 1 No ……..……0
243	Pregnancy test	Positive ……..… 1 Negative ……..…… 2 Pre-menarche/Hysterectomy/menopause……..…3 Not reported ……..…. 4
244	Specimens handed to police:	a) Name……. Yes 1 No 0 b) Signature……... Yes 1 No 0 c) Force no……..……. Yes 1 No 0
245	Concluding statement from gynaecological exam:	Does not exclude rape ……. 1 Injuries consistent with rape / suggested rape…...…2 Genital injuries……. 3 No injuries…….. 4 No evidence of rape …….……5 Rape/ sexual assault……..6 Evidence of penetration/ sex intercourse……7 Sexually active……..8 Alleged rape……..9 No concluding statement …….…… .10

246	Correlations between genital injuries mentioned and diagrams IF ANY MENTIONED	Complete correlation……1 One difference……..…….……2 2-3 differences……..…….……3 More differences……..……4 Nothing marked on diagrams……..……..5
	Anal examination – skin surrounding orifice	
247	Anal examination completed	Yes…….…… 1 No…… 0 →251
248	Anal findings:	a) Skin surrounding orifice. Yes 1 No 0 b) Orifice injury……... Yes 1 No 0 c) Sphincter tone finding.. Yes 1 No 0 d) Discharge……. Yes 1 No 0
249	Types of injuries IF ANY MENTIONED IN 248	a) Swelling……Yes 1 No 0 b) Laceration (stab) …… ... Yes 1 No 0 c) Burn …….. Yes 1 No 0 d) Scratches/abrasions/tears …… Yes 1 No 0 e) Bruising……..…… Yes 1 No 0 f) Haematoma……Yes 1 No 0 g) Tenderness……..…… Yes 1 No 0 h) Scars ? from assault……Yes 1 No 0 i) Bleeding seen……..…….Yes 1 No 0 j) Redness…….Yes 1 No 0 k) Other_____Yes 1 No 0 (specify)
250	Anal examination concluding statement:	Does not exclude rape …….……. 1 Injuries are consistent with rape…….……2 Anal injuries…….. 3 No evidence of injuries…….. 4 No evidence of rape …..…….……5 No concluding statement ……..…… 6 Other ……...7 Specify_____
251	J88 also completed for perpetrator	Yes…….1 No……..0
252	Were the conclusions justified by the J88 evidence?	Yes……1 No……..0

ANNEXURE H. STUDY 3: ETHICS APPROVAL FOR THE UNIVERSITY OF THE WITWATERSRAND

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Christofides

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M040331**
PROJECT	Is medico-legal evidence associated with positive legal otcome in rape, attempted rape and indecent assault cases.
INVESTIGATORS	Ms N J Christofides
DEPARTMENT	MRC
DATE CONSIDERED	04.03.26
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 04.05.01 **CHAIRPERSON** .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : n/a

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

ANNEXURE I. SUMMARY FINDINGS OF HEALTH SYSTEM MODELS OF CARE

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Basu & Ratcliffe al (2014). Developing a multidisciplinary approach within the ED towards domestic violence presentations	Population: Patients (males and females) accessing the Emergency Department Setting: Northern General Hospital, Sheffield, UK Study Design: Pre-post intervention design (without historical cohort)	Intervention: Form with rapid assessment tool, flow pathway, contact details; two advocates, intensive training for permanent staff and 2 hour training for rotating staff; electronic coding system for identification of patients Comparator: None	Sample size: Not stated Characteristics of participants: Not stated Assault characteristics: Not stated	Instrument: Not stated Data source: Not stated Time scale: Pre-intervention: July 2010 – July 2011 Intervention: Not stated Post-intervention: July 2011 – July 2012 Follow-up rate: Not applicable	Referrals: Pre-intervention (referral to social worker): 1 Post-intervention (referral to advocate): 121 *(No p value)*	Low Men and women in sample, no sample size for referrals, outcome assessment poorly described with poor methodology, no significance tests, overlapping assessment periods with date of intervention being unclear

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Coyer & et al (2006). Screening for Violence against women in a rural health care clinic.	Population: Women over the age of 18 yrs who were treated at a rural clinic Setting: Rural community health clinic in the Midwest, USA Study Design: Pre-post intervention design (without historical cohort) was used for the record review	Intervention: In-service training, history form included 'abuse' as a health risks, screening included in paper form as well as to the electronic medical record system, policies developed, health information and posters Comparator: No control group	Sample size: Jan-Dec 2000: 1 690 records Jan-Dec 2002: 859 records Characteristics of women identified with abuse: Age: Mean 45.5 yrs (Range 27 - 57 yrs) Ethnicity: 2 Hispanic, 4 Caucasian Assault characteristics: Abuse, rape, assault, battery, altercation, fight, argument or domestic violence	Instrument: Not described. Data source: Medical records of women seen in the clinic over the study period. Time scale: Pre-intervention: Jan - Dec 2000 Intervention: Not stated Post-intervention: Jan - Dec 2002 (6 months after intervention) Follow-up rate: Not applicable	Referrals: *Pre-intervention*: 0 (0%) *Post-intervention*: 5 (0.6% of total sample, 6 women identified with abuse) *(No p value)*	Low Observational study. No statistical significance levels provided. Pre- post intervention without a historical cohort, no control group

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Fanslow & Norton (1999) One year follow up of an emergency department protocol for abused women	Population: Women aged 15 years and older presenting to Emergency departments (ED) Setting: ED in two public sector hospitals in Auckland, NZ, offering 24 hrs care. Study design: Pre-post intervention design (without historical cohort) using retrospective review of randomly sampled records	Intervention (at one ED): 1 – 4 hours in service training plus 3 afternoon sessions with police, refuge and 1 on cultural issues; distribution of protocol and printed forms for risk assessment, documentation and referrals; staff nurse appointed to publicise the assistance of staff nurses, to train new staff, and develop referral linkages Comparator: Standard care provided at ED at comparison hospital	Sample size: 10 961 records reviewed in both hospitals for all time periods (pre-intervention, post-intervention and follow-up) Characteristics of participants: Not stated Assault characteristics: Not stated but physical assault and sexual assault by spouse boyfriend or ex-boyfriend implied	Instrument: Not stated Data sources: Medical records Time scale: Pre-intervention: October - Dec 1992 Intervention: Not stated Post-intervention: Oct - Dec 1993 Follow up: Oct - Dec 1994 Follow-up rate: Not applicable	High intervention (≥2 out of 9 interventions that are listed below were provided): *Pre-intervention:* Intervention: ± 11% Control: ± 23% P value 0.05 *Post-intervention:* Intervention: ± 49% Control: ± 23% P value 0.02 *Follow-up:* Intervention: ± 25% Control: ± 10% P value 0.21 *(Results presented as graphs, exact figures not provided)* (Interventions included examination / treatment for presenting physical or sexual assault, examination for past physical or sexual assault, assessment for sexual assault, homicide risk	Low Narrow definition of assault, exact sample size per site and time period not provided, data only presented in graphs, intervention data all merged and no data on individual interventions, unclear what level of statistical analysis was done for the outcome presented here, identification rates were higher at post-intervention but not at follow-up.

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
					assessment, assessment for depression, police contact discussed, legal options discussed, safety plan discussed, and referral to community or social service offered)	
Fanslow et al. (1998) Outcome evaluation of an emergency department protocol of care on partner abuse.	Same as above	Same as above	<u>Sample size:</u> 8 051 records reviewed in both hospitals for both time periods (pre and post-intervention)	<u>Time scale:</u> Pre-intervention: October - Dec 1992 Intervention: Not stated Post-intervention: Oct - Dec 1993	<u>Offers of police contact:</u> *Pre-intervention*: 5% *Post-intervention*: 43% *(At intervention site only)* *(No p value)* <u>Referral to community or social services:</u> *Pre-intervention*: 2% *Post-intervention:* 25% *(At intervention site only)* *(No p value)*	As above, error in coding of documentation listed in 1999 study, insufficient presentation of data

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Feder and colleagues (2011) Identification and Referral to Improve Safety (IRIS) of women experiencing domestic violence: a cluster randomised controlled trial of a primary care training and support programme	Population: Females aged over 15 years Setting: General practices in two urban primary care trusts, in Bristol and Hackney (UK) that use electronic medical records stratified by proportion of full-time female doctors, postgraduate training, number of patients registered, and percentage of the practice population in low income. Study design: Cluster randomized controlled trial	Intervention: In 24 general practices, intervention comprised of two practice-based training sessions, electronic prompts linked to diagnostic codes, cards and posters, referral path to a named agency advocate, a practice champion, feedback on referrals and reinforcement over the course of a year. Comparator: 24 control practices matched to intervention practices by number of registered patients and training status.	Sample size: Intervention: 24 practices with median of 7 000 registered patients Control: 24 practices with median of 7 283 registered patients Characteristics of participants: % female GPs in practice Intervention: 2% Control: 1% % teaching practice Intervention: 67% Control: 54% % low income patients in practice Intervention: 32% Control: 32% Assault characteristics: None	Instrument: Not stated Data source: Electronic medical records Time scale: Pre-intervention: 12 months prior to first training at intervention sites Intervention: Sep 2007 - Sep 2008 Post-intervention: 12 months after second training at intervention sites Follow-up rates: 100% of practices	Recorded referrals: *Pre-intervention* Intervention: 11 Control: 12 *Post-intervention:* Intervention: 223 Control: 12 Adjusted incident group rate ratio (IRR) for intervention group: 21 (95%238 CI 10.7 - 41.1) Referrals received by specialist domestic violence agencies 12 month post: Intervention: 238 Control: 40 Adjusted IRR for intervention group: 6.43 (95% CI 4.1 – 10.7)	Medium Research associates collecting data could not be blinded to study arm but compared to extraction by an independent researcher who was blinded, three month period when self referral data were not collected in one of the collaborating domestic violence agencies for three months, possible limited generalisability of findings.

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Harwell et al (1998). Results of a domestic violence training program offered to the staff of urban community health centres.	Population: *Phase 2*: Female clients aged 15 – 44 who had at least one visit to CHC 6 months prior to and 6 months post RADAR training. Setting: *Phase 1:* 12 Urban (federal) community health centres (CHCs), Philadelphia, USA *Phase 2:* First four CHCs trained Study Design: *Phase 2:*	Intervention: *Phase 1:* 3 – 6 hour RADAR training program, resources developed (pocket card, DV abuse assessment form, stamp to indicate screened patients, help card) *Phase 2:* Additional follow-up training and support provided to first 4 CHCs trained (In 2 CHCs: presentation on trauma theory, group discussion of IPV and preventing IPV. In other 2 CHCs: in-depth review of RADAR discussion on working with	Sample size: *Phase 2* Pre-intervention: 251 records Post-intervention: 255 records Characteristics of participants: *Phase 2* Mean age: 30 yrs 74% single 71% not living with a partner 86% not pregnant 97% public health insurance 52% Latina 47% African American Assault characteristics: Not stated	Instrument: *Phase 2:* Standardised data form Data sources: *Phase 2:* Medical records from 4 CHCs Time scale: *Phase 2:* Record review: 6 months post training Follow up rates: *Phase 2:* Not applicable	*Phase 2* Referral within CHC Pre-intervention: 2% Post-intervention: 4% p value NS Referral outside Pre-intervention: 0% Post-intervention: 4% p value ≤0.05	Low Observational study, small sample size for phase 1, low follow-up rates; individual effects of the interventions not determined, level of screening by individual clinicians not discerned, although defined as a training intervention it included additional components as listed in the intervention, phase 2 was implemented differently in the 4 sites, time scale unclear

	Pre-post intervention design (without historical cohort) was used for the medical record review	difficult cases, group discussions with social work staff regarding communication and referrals to outside DV agencies). It is not clear when Phase 2 occurred. <u>Comparator:</u> None *(RADAR - Routine screening, Ask direct questions, Document your findings, Assess patient safety, and Review patient options and referral)*				

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
McCaw et al (2001). Beyond Screening for Domestic Violence: A Systems Model Approach in a Managed Care Setting.	<u>Population:</u> *Clinician referrals:* All members of health maintenance organization <u>Setting:</u> Richmond, California, facility of the Kaiser Permanente Medical Care Program, a nonprofit, closed-panel, group-model health maintenance organization, USA <u>Study Design:</u> Pre-post intervention design (without historical cohort)	<u>Intervention:</u> The Family Violence Prevention Project that consisted of four interrelated components with ongoing information and training. The four components were: 1) supportive environment (pamphlets, resource cards, posters, media outreach through member newsletters); 2) screening and referral (focused training, environmental prompts, feedback on referrals, resources - toolkits, posters, information material, resource	<u>Sample size:</u> *Clinician referrals:* Not stated but 71 000 members of which 19 290 are women <u>Characteristics of participants:</u> *Clinician referrals:* Collected but not stated although 45% White, 22% African American, 16% Latino and 16% Asian in members; 92% high school graduate, 37% earn <$25 000 /annum in members <u>Assault characteristics:</u> Harmed or threatened, either physically or emotionally, by someone either live with or are close to, or	<u>Instrument:</u> *Clinician referrals:* Not stated <u>Data sources:</u> *Clinician referrals:* Not stated Referrals from clinicians to the DV specialist <u>Time scale:</u> *Clinician referrals:* Pre-intervention: Not stated Intervention: May 1998 – May 1999 Post-intervention: Not stated <u>Follow-up rates:</u> Not applicable	<u>Referrals to DV specialist</u> *Total* Pre-intervention: 51 referrals Post-intervention: 134 referrals *Medicine* Pre-intervention: 25 Post-intervention: 46 *O & G* Pre-intervention: 8 Post-intervention: 25 *Psychiatry* Pre-intervention: 4 Post-intervention: 24 *Self* Pre-intervention: 2 Post-intervention: 18 *Emergency* Pre-intervention: 3 Post-intervention: 14 *Social services* Pre-intervention: 2	Low Observational, potential limited generalisability of the population, short follow-up period for the telephone survey, resource intensive reduces feasibility in low-resource settings, sample size for referrals is unclear so value uncertain, no statistical analysis or adjusted values provided

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
	for review of clinician referrals to domestic violence specialist	cards); 3) on-site IPV services (mental health clinicians with training in IPV who had links with community agencies (crises line, emergency housing, legal assistance, immediate crisis response team access by advocacy agency)) <u>Comparator:</u> None	forced by them into sexual activities when did not want to participate		Post-intervention: 7 *Unknown* Pre-intervention: 7 Post-intervention: 0 *(No p value)*	

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Muñoz et al (2001) Improving care for victims of domestic violence. Impact of a priority intervention	Population: Women and children residing in a shelter for battered women who had clinical records opened at the health centre Setting: Urban health centre in a district, Spain Study Design: Pre-post intervention design (without historical cohort)	Intervention: Allocation to a single family doctor and paediatrician, elimination of bureaucratic obstacles and prioritised care, social/family assessment by the social worker, preferential inclusion in programmes (women: family planning, contraception, hep B vaccination, early diagnosis of breast cancer (women > 50) and cervical cancer, children: child health (< 5), psychomotor development and somatometry,	Sample size: Pre-intervention: 36 women, 70 children Post-intervention: 35 women and 41 children Characteristics of participants: Mean age of women: 33 years, 63.5% married, average number of children: 2 Risk factors for alcoholism: 24% Risk factors for drugs: 25% *(no significant differences for above)* Number of children in the house Pre-intervention: 2.2 Post-intervention: 1.3 p value <0.05 Time in district Pre-intervention: 8.6 years Post-intervention: 2.9	Instrument: Not stated Data sources: TASS registration system, paper records and social worker Time scale: Pre-intervention: Dec 1997 - July 1999 Intervention: Aug 1999 Post-intervention: Aug 1999 - June 2000 Follow-up rates: Not applicable	Number of visits to family doctor: Pre-intervention: 2.1 Post-intervention: 3.0 p value 0.002 Number of visits to paediatrician: Pre-intervention: 1.1 Post-intervention: 2.0 p value 0.00006 Number of visits to social worker: Pre-intervention: 1.0 Post-intervention: 1.1 p value 0.03 Number of visits to programmes: Pre-intervention: 0.9 Post-intervention: 1.0 p value 0.0004 Hep B vaccination: Pre-intervention: 18.9% Post-intervention: 48.7% p value 0.00002	Low Observational, small sample size, non-randomised study design, ? generalisability of findings, feasibility of intervention in other settings, no adjusted analysis - multiple fisher exact tests done

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
		vaccinations. <u>Comparator:</u> None	months p value <0.05 Mean age of children: Pre-intervention: 6.0 years Post-intervention: 6.3 years p value <0.05 <u>Assault characteristics:</u> Not stated		<u>Social & family assessment:</u> Pre-intervention: 84.0% Post-intervention: 100% p value 0.0006 <u>Family planning:</u> Pre-intervention: 14% Post-intervention: 51.4% p value 0.0004 <u>Cervical cytology:</u> Pre-intervention: 0% Post-intervention: 25.7% p value 0.0003 <u>Vaccinations (children):</u> Pre-intervention: 26.3% Post-intervention: 64% p value 0.0002 <u>Child health (children):</u> Pre-intervention: 33.3% Post-intervention: 70.6% p value 0.003	

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
					Psychomotor (children): Pre-intervention: 41.7% Post-intervention: 94.2% p value 0.03 Somatometry (children): Pre-intervention: 25.0% Post-intervention: 100.0% p value 0.006 Analytical blood tests: Pre-intervention: 14.2% Post-intervention: 38.2% p value 0.0002 Percentage without health problem: Pre-intervention: 47.0% Post-intervention: 14.5% p value 0.000005 Percentage without prescriptions: Pre-intervention: 65.0% Post-intervention: 39.0% p value 0.007	

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
					Percentage not referred: Pre-intervention: 87.7% Post-intervention: 39.0% p value 0.0008	

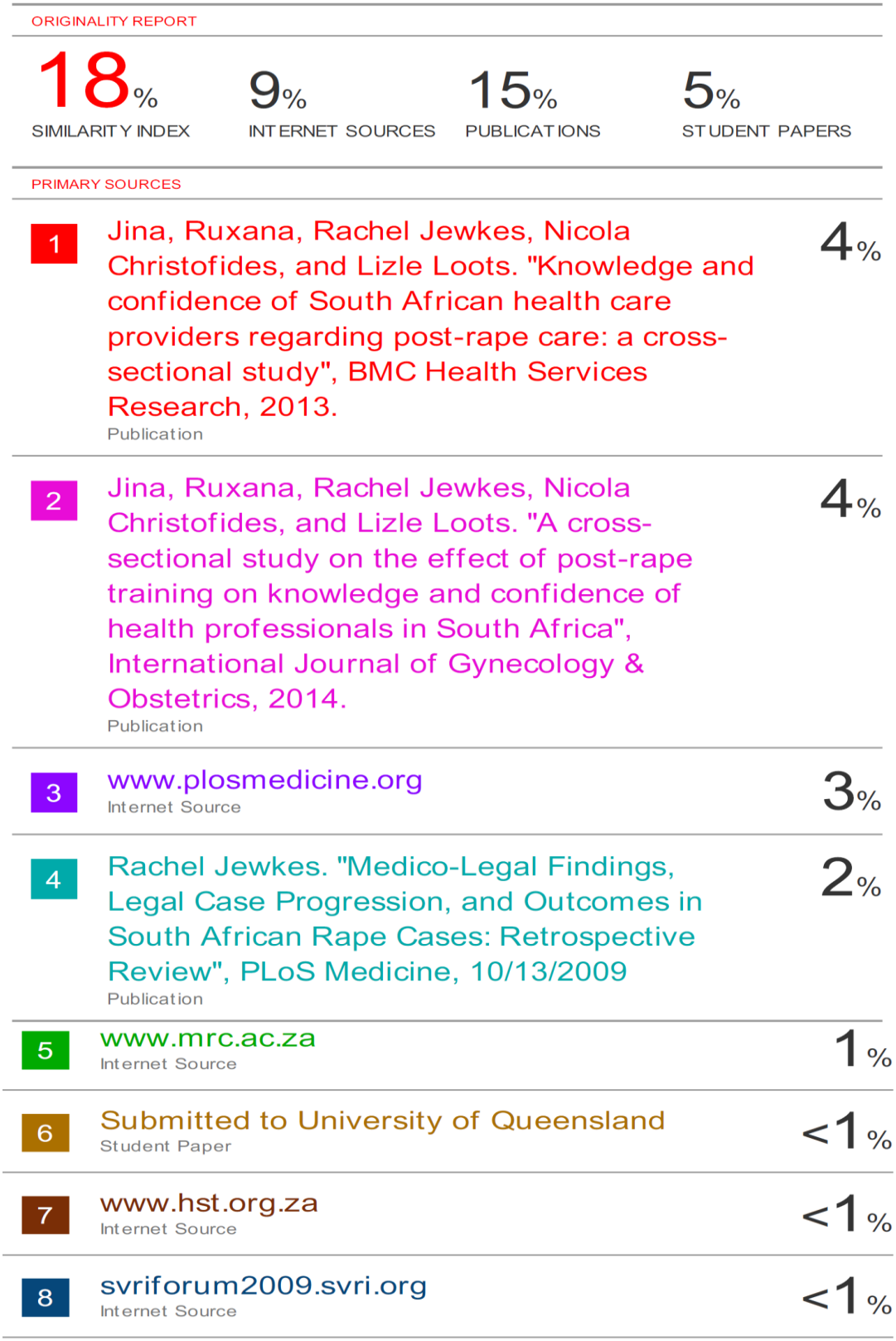
Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Ramsden & Bonner (2002) A realistic view of domestic violence screening in an Emergency Department	Population: All women ≥16 years presenting at study setting Setting: ED of Sutherland Hospital, a district hospital in the metropolitan area of Sydney, Australia Study Design: Pre-post intervention design (without historical cohort)	Intervention: 4 hour-training session, resources available (resource card, policy, laminated resource list), screening form Comparator: None	No of participants: Pre-intervention: 2 608 women (? number screened) Intervention: 2 446 women (245 screened) Characteristics of participants: Not stated Assault characteristics: Hit, slapped, hurt, frightened of partner, unsafe to go home	Instrument: Screening form, questionnaire on screening process, telephone interviews with women, focus groups with staff. Data source: Medical records, women (unsure how sampled), ED staff Time scale: Pre-intervention: 3 months prior Intervention: Oct – Dec 2000 Follow-up rates: Not applicable	Referred to social worker: Pre-intervention: 8 (0.3%) Intervention: 14 (0.6% of total sample, 15% of the 36 women who were identified with abuse) *(No p value)*	Low Observational study, small number with outcome, no statistical analysis

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Short et al (2002). Assessing the success of the Woman Kind project: An Integrated Model to 24-hour Health Care Response to Domestic Violence.	Population: *Record review:* Female patients >12 yrs seen at ED for drug/alcohol use, suicide attempt or ideation, mental health problems, assault, fractures, lacerations, contusions, headaches, migraines, pregnancy complication, STI, gynaecological problem, rectal bleed, loss of consciousness, faintness, falls, epistaxis and shortness of breath Setting: Five hospitals in Minneapolis, USA	Intervention: In three hospitals where the Woman Kind programme operates. The programme includes specialized training for hospital staff, universal screening, and in-house system of paid professional WomanKind staff and volunteer advocates 24/7. Comparators: In 2 hospitals equivalent size and patient demographics in same geographic region. Usual care	Sample size: 2 531 records (for all 5 hospitals combined) Characteristics of participants: Record review: Not stated Assault characteristics: Not stated	Instrument: Chart review protocol Data sources: Records of patients. Time scale: Intervention: Not clear but think Jan 1996 – Feb 1997 Record review: Four one-month intervals during the course of the study Follow-up rate: Not applicable	Record review: Intervention hospitals had higher rates for making any referral (p value < 0.0001, no other data presented) Patient referrals: Intervention hospital: 1 719 survivors identified and referred to WomanKind program Control: 27 survivors referred to trained social workers	Low - medium Sampling strategy and sample size not always clear, follow-up periods not always easy to distinguish, multiples methods not explained in enough detail, unclear if statistical differences in mean scores related to difference in clinical care, actual screening practices was not assessed, other factors contributing to improved knowledge of intervention hospitals like staff attitudes, female staff, management styles etc.

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
	<u>Study Design:</u> Quasi-experimental design using various research methods. Only the review of medical records presented here					

Author, Date, Title	Population, setting and Study design	Interventions, Comparators	Sample size, characteristics of participants, and assault characteristics	Outcome Assessment: Domains/Instruments, data sources, time-scale and follow-up rates	Outcome Results	Quality of Evidence
Wiist & McFarlane (1999) The Effectiveness of an Abuse Assessment Protocol in Public Health Prenatal Clinics	<u>Population:</u> All prenatal patients at their first visit <u>Setting:</u> 3 matched prenatal clinics of the public health department of a large city in the southwestern USA <u>Study Design:</u> Quasi-experimental design	<u>Intervention:</u> At two clinics implementation of an abuse assessment protocol, training of staff, nurse trainer weekly visits clinics to offer support and guidance and instruct new nurses, abuse counsellor on-site <u>Comparator:</u> At one clinic routine service	<u>Sample size:</u> Record review of women after her delivery due date: Pre-intervention: 180 at each of the clinics Post-intervention 1: 55 at each of the clinics Post-intervention 2: 125 at each of the clinics <u>Characteristics of participants:</u> 96% Latina 97% annual family incomes < $20000, 60% 20 - 29 years 24% <20 years 42% in 1st trimester at 1st visit 42% 14 - 28 weeks 46% women at the intervention clinics and 31% at the comparison clinic had annual family incomes ≥ $10000 (p value 0.001) <u>Assault characteristics:</u> Not stated	<u>Instrument:</u> Abuse screen form included in all medical record <u>Data source:</u> Medical records of women with first visits during the study period <u>Time scale:</u> Pre-intervention: 15 months prior Intervention: Not stated Post-intervention 1: 3 months post Post-intervention 2: 15 months post <u>Follow-up rates:</u> Not applicable	<u>Referred</u> *Post-intervention 1:* Intervention clinics: 6 (67% of identified) Comparison clinic: 0 (0%) *Post-intervention 2:* Intervention clinics: 9 (53% of identified) Comparison clinic: 0 (0%) *(No p value)*	Low Not randomized study design, small sample size, no significance testing, time period for intervention not stated

ANNEXURE J. TURNITIN REPORT



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