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Medical circumcision integrated within traditional male initiation ceremonies for HIV prevention in Yangoru-Saussia, Papua New Guinea.

A thesis submitted for the Doctor of Philosophy degree at James Cook University

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College of Medicine and Dentistry, Cairns, Australia.

December 2019

Dedicated to

Vincent Huanje of KinieNumbohu
Damien Ikombi of Kumbuhun
Mak'es Pengiama of Boem-Sara

Your words
And the enthusiasm you had
In looking to our culture
For health and well-being
Remains here in this thesis
Forever.

Abbreviations

ABC.....Abstinence, Be faithful and Condom use

AIDS.....Acquired Immunodeficiency Syndrome

AOG.....Assemblies Of God (Church)

AProf.....Associate Professor

AROB.....Autonomous Region of Bougainville

ART.....Antiretroviral Therapy

AusAID.....Australian Agency for International Development (now known as Depart of Foreign Affairs and Trade or DFAT)

BRA.....Bougainville Revolutionary Army

CMD.....College of Medicine and Dentistry

CSS.....Cross-Sectional Survey

DDADistrict Development Authority

DWU.....Divine Word University

ESPAC.....East Sepik Provincial AIDS Committee

FGD.....Focus Group Discussions

HIV.....Human Immunodeficiency Virus

JCU.....James Cook University

LLG.....Local Level Government

LNG.....Liquefied Natural Gas

MC.....Male Circumcision

MICs.....Male Initiation Ceremonies

MMC.....Medical Male Circumcision

MP.....Member of Parliament

MRAC.....Medical Research Advisory Committee (of Papua New Guinea)

NAC.....National AIDS Council (of Papua New Guinea)

NACS.....National AIDS Council Secretariat

OBE.....Outcome Based Education

PAU.....Pacific Adventist University

PhD.....Doctor of Philosophy

PLHIV.....People Living With HIV

PNG.....Papua New Guinea

Prof.....Professor

SDA.....Seventh Day Adventist (Church)

SKIP.....Skills for International Postgraduates

STI.....Sexually Transmitted Infections

SVD.....Society of Divine Word

UNAIDS.....United Nations Program on HIV and AIDS

UNESCO.....United Nations Education Science and Cultural Organization

VCT.....Voluntary (HIV) Counselling and Testing

WHO.....World Health Organization

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Declaration

This thesis contains my original work and that no part of it has been written or published by another person although there were co-authors of a published paper whose contributions have been described and duly acknowledged under the ‘statement of contribution’ in this thesis. In addition, any writing assistance including suggestions or comments made in this thesis are clearly stated and acknowledged.

I also declare that no material in this thesis was submitted and considered for a degree, diploma or certificate at any other university or college.

10th December 2019

Signature

Date

Statement of contribution of others

Researchers involved in this study co-authored the published paper presented in chapter 6 of this thesis. The co-authors have consented for that paper to be included in this thesis through their signatures provided below in Table A.

Table A. Co-authors' consent to have published paper included in this thesis.

Clement Manineng Conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, validation, writing – original draft, writing – review and editing. Signature Date 25/11/19
David MacLaren Conceptualization, data curation, formal analysis, methodology, resources, supervision, validation, writing – review and editing. Signature Date 26/11/19
Maggie Baigry Conceptualization, investigation, methodology, resources, writing – review and editing. Signature Date 25/11/19
Emil Trowalle Conceptualization, funding acquisition, investigation, resources, writing – review and editing. Signature Date 28/11/19
Reinhold Muller Formal analysis, methodology, resources, supervision, writing – review and editing. Signature Date 25/11/19
Andrew Vallely Supervision, writing – review and editing.

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Francis Hombhanje	
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William John McBride	
Methodology, resources, supervision, validation, writing – review and editing.	
Signature	Date 25/11/19

Table B. Contribution to writing of thesis

<p>Associate Professor David MacLaren</p> <p>As an expert in Public Health in the Pacific, especially among Melanesians, AProf MacLaren supported all aspects of the thesis from conceptualization and design of the PhD research project, to collection of data (particularly data for Part One of the study), analysis of data, interpretation of the analyzed data and reviewing of the chapters. In addition, AProf MacLaren assisted in writing the published articles included in chapter 6 and Appendix I of this thesis.</p>
<p>Professor Reinhold Muller</p> <p>In addition to initial work on conceptualization and design of the PhD study, Prof Muller provided expertise in quantitative data analysis and interpretation. Prof Muller also contributed valuable support in writing and editing some chapters, particularly chapters 5 and 6 that dealt with analysis and interpretation of quantitative data.</p>

Professor William John McBride

As a Clinician and Public Health specialist, Prof McBride provided support in conceptualization and design of the PhD research project and had valuable inputs in data analysis and interpretation. Prof McBride also contributed significantly in suggesting the thesis structure and in supporting writing of the chapters, including the published research articles provided in this thesis in chapter 6 and Appendix I.

Professor Andrew Vallely

Prof Vallely provided intellectual support as a leading expert in Sexual Health in PNG. Prof Vallely had inputs in interpretation of the data in relation to current literature surrounding HIV and sexual health in PNG. Prof Vallely also contributed valuable ideas on how the different components of the thesis would come together in this thesis.

Dr Diana Mendez

In her capacity as a facilitator of the Cohort Doctoral Program, Dr Mendez reviewed chapters 5 -9 and provided valuable feedback that led to improvements particularly in the structure of the chapters and the grammar and tenses of the sentences.

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Abstract

Background

This study investigated the acceptability and feasibility of integrating medical male circumcision (MMC) within traditional male initiation ceremonies (MICs) for HIV prevention in Yangoru-Saussia, Papua New Guinea (PNG). In this intervention, previously ceased MICs are revived and the unsafe traditional penile-cutting operations substituted with MMC. Conceptually, this modified cultural program exemplifies comprehensive HIV prevention recommended by WHO/UNAIDS given that male circumcision (MC) provides biological protection to initiated men and the re-established MICs confers sociocultural protection. Thus, the acceptability and feasibility of integrating MMC within MICs in Yangoru-Saussia was investigated.

Methodology

A sequential four-part multi-method study. Part One investigated sexual risk behaviours among circumcised men in order to inform the succeeding study parts. Existing quantitative data was examined and the association between foreskin cutting and sexual risk behaviours investigated. Part Two assessed the acceptability of the intervention. Two focus group discussions, 26 key-informant interviews and two cross-sectional surveys were conducted. Part Three investigated the practical feasibility of providing MMC within traditional MICs. An observational descriptive study was conducted during an actual staging of a modified MIC in Yangoru-Saussia. Part Four assessed the impact of the new program in the participating communities. Seven key-informant interviews with community leaders were conducted. Data in each part of the study were analyzed independently utilizing quantitative or qualitative analysis techniques as needed.

Results and Discussion

Results in Part One indicated that foreskin cutting had minimal to no effect on sexual risk behaviours among men in PNG. Circumcision and other forms of foreskin cutting had no association with condom use or non-use, nor were they associated with an increase or decrease in the number of female sexual partners. This finding meant that a future MC program was unlikely to affect condom use (or non-use) and or the number of female partners that men have sex with. Thus, it was safe to proceed with the new program.

Results in Part Two showed that most people in Yangoru-Saussia district support the initiative to integrate MMC within MICs for HIV prevention given the historical importance of the male rituals in this setting. However, some respondents had concerns about the possibility of reviving unchristian practices. In addition, there was debate on the substitution of traditional penile cutting with MMC given the cultural significance of the former. Deliberate inflicting of pain and bleeding on the penis symbolized separation from maternal ties and was significant in initiates' mental shift from boyhood to manhood. These findings meant that although people in the district supported the staging of modified MICs, there were conflicting views and tensions that should be considered in the design of future programs.

Results in Part Three indicated that integrating MMC within MICs was clinically and culturally feasible. The rate and type of complications were low and minor respectively and that the medical operation occurred in a culturally sensitive way. However, it was a mammoth task to assemble the resources required at the initiation grounds. Although the modified MMC-integrated MICs may now be staged without the fear of adverse events and community rejection, the challenge of assembling the required resources (including the medical team) needs to be carefully considered and accommodated in the planning of future programs.

Results in Part Four showed that the new MICs had significant impact on initiates and participating communities. The initiates' knowledge and skills of important cultural practices increased, conduct of young initiated men changed positively, consumption of drugs and alcohol among the men reduced and wellbeing in communities improved. Thus, a key objective of changing the mindset of initiates was maintained in the new program. Results also indicated that the significance and worth of the rite was not reduced to meaningless activities as was assumed initially.

In providing safe circumcision to men and enabling the re-establishment of a socioculturally beneficial tradition, the new MICs responded to a key national policy recommendation in reducing harm to men choosing male circumcision in PNG. It also fulfilled the five pillars of health promotion outlined by the WHO Ottawa Charter. However, there were tensions where the boundaries in practice between biomedicine and tradition overlapped. In addition, there were dilemmas with introduced Christian religion and constraints in health resources. Dialogue is needed between the different parties involved particularly between cultural, bio-medical and church leaders. In addition, local people should own and lead the said intervention in order for this new approach to work.

A model for modifying and utilizing the old MICs for comprehensive HIV prevention is developed and named 'Hwelembo', after the bygone Yangoru-Saussia initiation ceremonies. Its implementation may require considerable effort given the shift in the attitude of local people to modern ways. The 'ni-ne' collective attitude of the past should be rejuvenated and the customary user-pay arrangement restored for the Hwelembo model to work. Traditionally circumcising communities external to Yangoru-Saussia district could also adopt this model (depending on local acceptability) and modify where necessary to achieve individual and community health in their respective settings. Future research in this area should prioritize investigating the ability of the new program to actually prevent young initiated men (who have received traditional coaching, professional counselling and underwent MMC) from contracting HIV.

Conclusion

It was found in this multi-method study that it is acceptable and feasible to integrate MMC within traditional MICs for comprehensive HIV prevention in Yangoru-Saussia, PNG. However, there are tensions, debates and challenges presented by the historical, religious and cultural contexts, and by the resource constraints in the study setting that should be considered and accommodated in the planning of future programs. The 'ni-ne' collective attitude and customary user-pay arrangements should be fostered and local people should take lead for the 'Hwelembo' intervention to work in the district of study. Traditionally circumcising communities elsewhere could also adopt the Hwelembo model and modify it as needed to improve the well-being of men and their respective communities.

My standpoint

Standpoints show the lens through which researchers conduct scientific studies and examine data in relation to research questions or study phenomena (1, 2). Standpoints essentially describe how researchers view and understand the world so that those reading their work are able to appreciate the origins of the arguments they present.

My standpoint as the researcher in this study is largely 'indigenous'. Dennis Foley (2003) states that an indigenous standpoint is possible when the researcher is indigenous to the area of study or the topic of discussion; the researcher is able to discern between western and indigenous ideologies in relation to change; the research is undertaken to benefit the indigenous communities; and that traditional or local language is used in the recording and analysis of data (2). All these four criteria are satisfied in this research. I originate from the area of study and it happened that I lived my life through what may be said as the 'stone-age to the computer-age' in PNG. I was born and spent the first few years of my life in my village hamlet in Yangoru-Saussia, where I experienced the 'stone-age' living or life centred around subsistence activities and traditional ceremonies. Some years down the line, however, I found myself in the premier University in PNG where I studied medicine and came to use modern technologies such as computers, cell phones and the internet. I am now an academic at a growing university in PNG contributing to the creation and maintenance of indigenous knowledge. An indigenous standpoint was therefore employed in this study.

It is pointed out, however, that I also have experiences in medical practice and religious activities that shape the views presented in this study. As a medical practitioner, I am bound to the non-malevolence code of practice so that any arguments regarding bio-medical risks will sway towards risk reduction rather than to support activities that may increase the risk of harm. Similarly, as a Christian of the Seventh Day Adventist Faith, I am compelled by my spiritual aspirations to support Christian teachings even though it may conflict with my main indigenous standpoint. I was once the national president of the student Christian group 'Sepik Adventist Students Association (SEASA)' that had a membership of some 1000 students from across PNG.

Furthermore, I am a father to three beautiful children, who unlike me, are growing up in modern environments where cultures collide and traditions mix so that their unique cultural identities are in

danger of being suppressed or lost. Thus, as an indigenous man, I am obliged to pass on the stories of my people, their values and the unique practices that together form my children's expressed indigenous identities. Much of the cultural identity in Yangoru-Saussia (the study setting) revolves around the MICs. This thesis is therefore also angled from an optimistic viewpoint or the view in support of the said intervention. However, I do make considered efforts in pointing out the possible flaws in the idea of re-establishing previously ceased MICs in the study setting.

Outline of a chapter in this thesis

Each chapter in this thesis begins with the chapter number and title. These are followed by a summary box wherein the main points of the preceding chapter are stated and the information in the forthcoming chapter are introduced to the reader. Each chapter ends with another summary box that presents the main points of the chapter. In addition, each chapter is separated from other chapters by a page-breaker, which contains the diagram of the conceptual framework (Figure I). On this page-breaker diagram, a dotted purple arrow points to a dotted purple circle, indicating the location of the reader in the overall thesis.

Conceptual framework

A conceptual framework could be described as a diagrammatic representation of how the different parts of a research project are linked together in relation to a research question (3). It outlines the structure of the enquiry and the sequence of data collection, analysis and interpretation. The conceptual framework for this study is shown in Figure I.

Chapter 1

This is the background of the study, which describes how the research topic evolved and became the subject of this PhD study. Context-specific ways of HIV prevention were sought and the combining of MC (an effective modern biological intervention against HIV) and MICs (effective male behaviour-changing avenues of the past) appeared to be a key HIV prevention approach in East Sepik Province in PNG. Thus, the acceptability and feasibility of integrating medical male circumcision (MMC) within traditional MICs for HIV prevention was investigated in Yangoru-Saussia, a rural district in East Sepik Province.

Chapter 2

This is the setting of the study. Here, the geographical and sociocultural factors that influence the spread and prevention of HIV are described. There are two parts to this chapter. Part One describes the setting in PNG, while Part Two describes the setting in Yangoru-Saussia, the district of study. These descriptions highlight the rapid traditional-to-modern changes taking place and consequent breakdown of traditional social structures. Crumbling of traditional social structures in turn causes increase in social problems that leave individuals more vulnerable to HIV acquisition. There is emphasis thus in maintaining the traditional social structures in PNG.

Chapter 3

This is the introduction chapter. Here, the basis or rationale of the study is provided and the research question (and study aims and objectives) is formally posed. 'Is it acceptable and feasible to integrate MMC within traditional MICs for HIV prevention in Yangoru-Saussia?' Information including HIV risk determinants, current prevention approaches in PNG and the new approach of combining MMC with traditional MICs employed by the East Sepik Provincial AIDS Committee (ESPAC) are presented.

Chapter 4

This chapter describes the method used in the study. There were four parts to this research project. Part One was examination of existing data from the 'Acceptability of MC in PNG study'. This part of

the study involved statistical analysis to compare the sexual risk behaviours of cut (circumcised) men to uncut men. Part Two was the acceptability assessment that involved focus group discussions with male community leaders, key-informant interviews with male and female cultural experts and cross-sectional surveys. Part Three was the feasibility assessment that occurred during the staging of a trial modified male initiation ceremony that included MMC. Part Four was the impact assessment that involved key-informant interviews with community leaders.

Chapter 5

This chapter provides the results of Study Part One. The results showed that foreskin cutting was not associated with key sexual risk behaviours. It appeared thus, that a scale-up of MC can be recommended for HIV prevention in some locations in PNG. This finding provided assurance that the MC to be provided in the new male initiation program would not necessarily cause an increase in sexual risk behaviour among the initiates. Hence, it was safe to proceed to parts Two, Three and Four of this study.

Chapter 6

This chapter provides the results of Study Part Two. The results in general showed that the integration of MMC within MICs is culturally acceptable, although there were concerns on the possibility of reviving unwanted practices such as black magic. In addition, blood loss that resulted from traditional penile-cutting had cultural significance and its substitution with MMC (which was essentially painless and bloodless) was contentiously debated.

Chapter 7

This chapter provides the results for Study Part Three. The results showed that integrating MMC within MICs was practically feasible. MMC was provided in a culturally sensitive way, the rate of complications was low and type of complications were minor, and the cost per circumcision was comparable to standard MMC costs. However, the staging of the modified rite required great effort in mobilising the resources required.

Chapter 8

This chapter presents the results of Study Part Four. It was found that the modified rite had significant impact in the communities that participated in the program. The cultural skills of initiates were markedly improved and their behaviour was positively changed with noticeable reduction in alcohol and marijuana related problems in the communities. On the other hand, the new program also caused rifts between facilitators of the program and some members of the communities, particularly active Christian churchgoers.

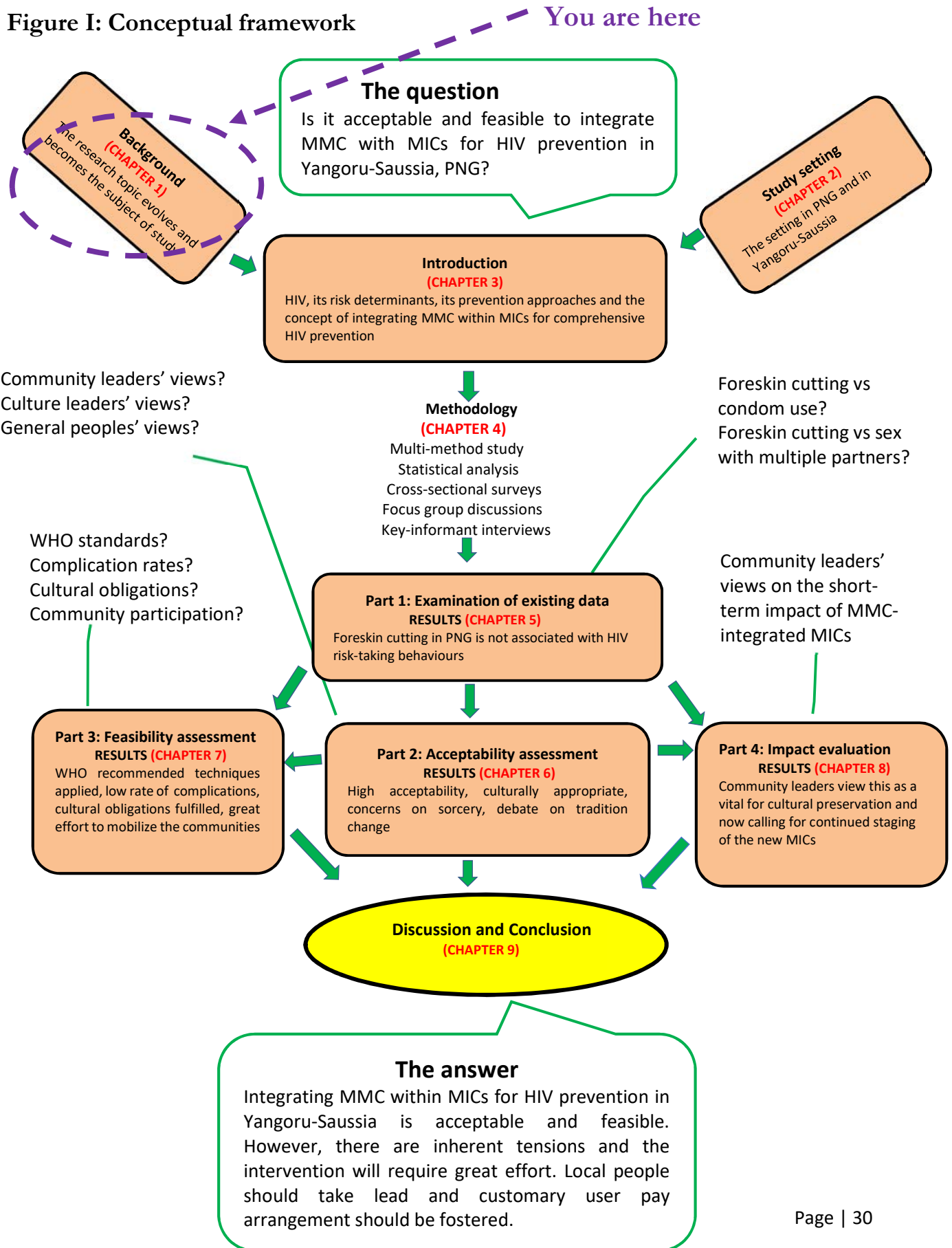
Chapter 9

This chapter presents the discussion and conclusion of the thesis. The results presented in chapters 5-8 are examined and discussed in relation to the research question. Overall, it was found that integrating MMC within revived MICs was culturally acceptable and practically feasible in Yangoru-Saussia. However, there are issues surrounding modification to local culture and the social dynamics of individuals and participating communities that must be considered when planning future programs.

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Figure I: Conceptual framework



1. Background

Summary

In this chapter, I will outline how the concept of integrating MMC within MICs evolved and became the subject of this PhD study. MC was considered a key intervention against HIV in PNG. The revival of traditional MICs for sociocultural well-being was also envisioned for HIV prevention in East Sepik Province in PNG. However, the old male rites involved high-risk penile-cutting operations and the possibility of negating or minimizing this risk by substituting traditional penile-cutting with MMC became the subject of this study.

1.1. The first male circumcision for HIV prevention program in PNG

In 2006, Sr Joseph Taylor, a Catholic Nun and Specialist Surgeon became aware that male circumcision (MC) protects against HIV and in an effort to help control the rapid spread of the virus in her setting, began the first known MC for HIV prevention program in PNG (1). Sr Joseph organized a small group of male health workers at Wewak General Hospital in East Sepik Province and a MC for HIV prevention service was provided to interested men and boys in the Province (1).

This new MC program was expected to be a key method of HIV prevention in East Sepik Province given that not only was it useful bio-medically, it had a cultural and historical relevance to the local people, which meant that it was also important contextually (1-4). However, this program was impeded by a number of factors including insufficient funding, lack of appropriate health personnel and deficiencies in leadership at provincial and national levels of health governance (1). In addition, there was no policy on MC in PNG that could enable the relevant authorities to allocate health resources towards this early MC HIV intervention in PNG.

Despite the nonexistence of any MC policy, the East Sepik Provincial AIDS Committee (ESPAC) – the entity responsible for the HIV Response in the Province – embraced this MC program and expanded it by taking the service to the men in selected locations throughout the Province. A small group of health workers led by a senior officer (usually a medical officer) were taken (along with the necessary instruments and consumables) to selected communities where MC was provided onsite to the men (4). The ESPAC was a branch of the PNG National AIDS Council (PNG NAC), which was established through an act of parliament to counter HIV in PNG (5, 6).

The researcher (CM) was working at that time in 2006 as a Resident Medical Officer (RMO) at Wewak General Hospital and was aware of the MC for HIV prevention operations, although he was not directly involved in the program. It was not until 2009 – when CM was at Divine Word University (DWU) and becoming interested in contributing to the fight against HIV in PNG – that he turned his attention to MC and the possibility of combining it with traditional behaviour-changing MICs for HIV prevention in East Sepik Province.

1.2. The ‘Traditional best practice for HIV prevention study’

In 2009, the researcher (CM) who was then working at DWU as a Medical Officer (MO) and junior academic, with support from ESPAC began the study titled ‘Traditional best practice for HIV prevention study’ in Yangoru-Saussia district in East Sepik Province (See final report of the study in Appendix IV). Ethics and funding of some K65, 000 (AU\$27,000 at K1.00 =AU\$0.42) was granted by the PNG NAC. This research project was supported because the PNG NAC was pursuing locally designed approaches to HIV prevention in PNG. In addition, PNG NAC was interested in building the capacity of national researchers, enabling them to conduct research independently into HIV and other public health challenges in the country. CM was the lead investigator in the ‘Traditional best practice for HIV prevention study’, supervised by Professor Francis Hombhanje and Professor Fr Patrick Gesch, both of whom were knowledgeable with the traditions and the shifting cultural-context of the people in Yangoru-Saussia.

The ‘Traditional best practice for HIV prevention study’ was conducted because conventional methods of HIV prevention employed by ESPAC were being criticized. Many local people, particularly community leaders, were saying that it was not enough just to raise awareness of HIV among the local people and to disburse condoms at designated locations in the Province. People were also telling the ESPAC officers that there were cultural processes that could extend the scope of HIV prevention beyond knowledge (of HIV) increase and condom distribution. Thus, it was important to investigate what ideas the local people had about how best to prevent HIV in the communities in East Sepik Province. As a HIV response team, ESPAC was also interested in bottom-up (rather than top-down) and context-specific approaches to HIV prevention; approaches that people can easily accept and utilize in their respective communities.

In Phase One of that study (in 2009), we asked the community leaders (including cultural leaders) in Yangoru-Saussia about what ‘in their view’ were the best traditional practices that could be used to

help reduce the spread of HIV in their communities. It emerged from that study that community leaders wanted to improve sociocultural well-being of young people as a basis to improving sexual health including HIV prevention. The mechanism that they suggested to use to improve the sociocultural well-being was to bring back the MICs that were ceased in the 1970s (See Appendix IV). However, it was unclear as to how exactly the MICs could help in preventing HIV in the communities. It was interesting then to explore and describe the details of the old MICs in Yangoru-Saussia, including the reasons behind their discontinuation.

In Phase Two of the study (in 2011), we asked the cultural leaders in Yangoru-Saussia about how MICs could help HIV prevention in the communities. We also asked about specific activities within the male rites that could be responsible for preventing HIV transmission in men in the villages. The cultural leaders pointed out that men were changed during initiation. They reasoned that MICs were traditional avenues at which young men underwent training and coaching to lead responsible lives as adult men (7). It was also pointed out that the main activities that changed boys to make them become men were the penile-cutting operations and the traditional herb ingestion ceremonies (7). These behaviour-changing rites, according to study respondents, were ceased by colonial administrators and early Christian missionaries because the rites included hazardous penile-cutting operations and some activities conflicted with introduced Christian beliefs. How then would it be possible to utilize this manhood rite for HIV prevention if it had activities that were dangerous to health and conflicting to established Christian beliefs?

It was important to ponder at that stage whether it was acceptable to modify the traditional MICs to ensure participant safety and to accommodate introduced Christian beliefs and other demands of contemporary living. It was also important to ask if people in general in the communities would support the revival of a practice ceased some five decades ago. In terms of service delivery, it was critical to consider the type and availability of resources needed to re-establish a modified form of the traditional MICs. Thus, the idea of integrating MMC within traditional MICs was beginning to take shape.

1.3. Medical male circumcision integrated within revived male initiation ceremonies: the Drekiier experience

In 2012, ESPAC trialed the idea of integrating MMC within traditional MICs for HIV prevention. This trial occurred in Drekiier, a district in East Sepik Province, which has many shared cultural

beliefs and traditions (See published article in Appendix I). CM was engaged by ESPAC as lead medical officer because apart from being a fully registered and practicing clinician originating from East Sepik Province, he was at the forefront of researching the idea of modifying and re-establishing the traditional MICs for HIV prevention in Yangoru-Saussia and other traditionally penile-cutting communities in PNG.

Communities in Drekikier district – like most communities in East Sepik Province – had MICs that included penile-cutting operations. Although discontinued (at least as a formal event) upon the arrival of colonial administrators and missionaries, the stories of those rites were very much alive among the people in that community. To capture that cultural and historical context of the local community, ESPAC in collaboration with community leaders built a bush hut and an operation shelter in a secret location, deep in the jungle. The men who gathered there (initiation candidates and cultural leaders) took part in ritual activities in and around the bush hut. The MC operation was provided in a small shelter adjacent to the main ceremony house. The circumcised men and their cultural leaders stayed in the ritual location until the wounds healed and a pass-out ceremony was organized for them in the community (4).

Standard MC techniques were applied during that medical operation in the jungle. In addition, sterile instruments, gloves and gauze pads were used. Only two minor complications were encountered, both of which were promptly managed (4). The low rate and minor type of complications resulting from this jungle-hut operation suggested that it was safe to provide MC at makeshift shelters within manhood rites. It follows then that if it was safe to administer MC to men undergoing initiation, then it may be possible to re-establish the behaviour-changing MICs of the past for the purpose of HIV prevention in communities that practiced penile-cutting traditionally.

However, there were still many unanswered questions. It was not clear for instance if the cultural leaders in that local community were happy about changes to tradition being trialed, including of substituting traditional penile-cutting (which involved excruciating pain and substantial blood loss) with painless and bloodless modern MMC. It was also important to assess any impact a modified version of the old MICs may have in the local communities. Thus, although the Drekikier experience indicated that it was safe and feasible to integrate MMC within MICs, another study was needed to formally assess and re-affirm or negate these early findings.

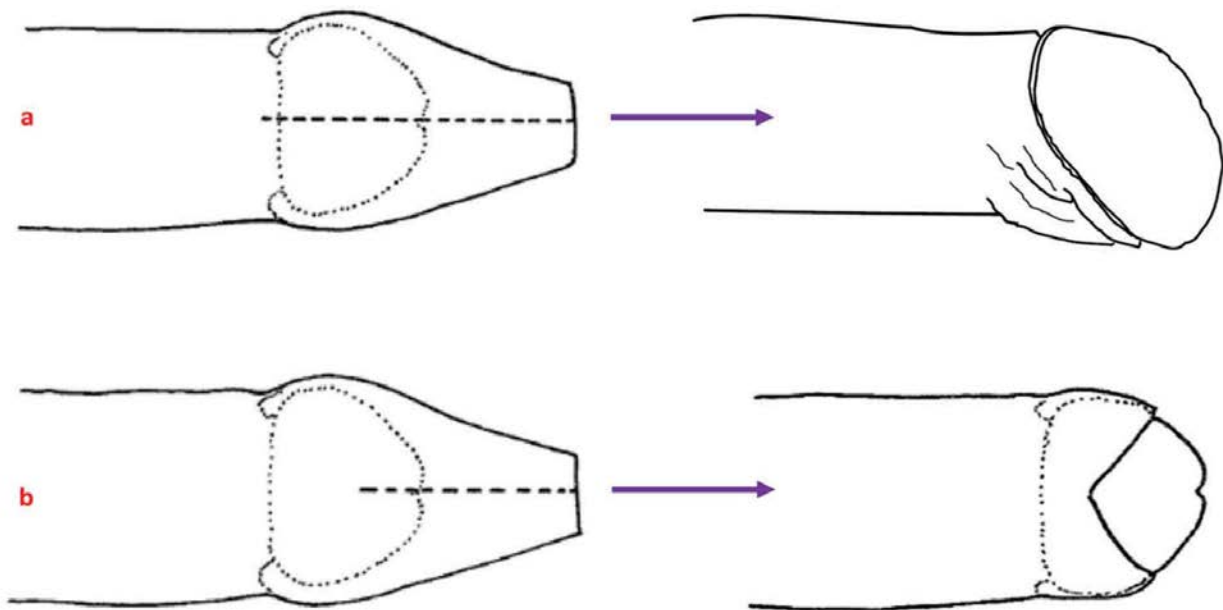
1.4. The acceptability of male circumcision for HIV prevention in PNG study

Over the same period (2009-2012), the large multi-site ‘Acceptability of MC for HIV prevention in PNG study’ was conducted. The researcher (CM) was the coordinator of that large study at Divine Word University (DWU). That study conducted at four sites in PNG involved three universities: DWU and Pacific Adventist University (PAU) in PNG and James Cook University (JCU) in Australia. That study aimed to contribute evidence to help inform policy on the possibility of utilizing MC as an intervention for HIV prevention in PNG (8). Evidence coming out at that time particularly from Africa indicated that MC was a simple and effective method of preventing HIV (9-12). Scaling up this surgical procedure had the potential to substantially reduce HIV transmission in high HIV prevalent countries (13-14).

The results of that MC study showed that penile-cutting practices were common but varied across PNG and that acceptability of the procedure was high among the people (8). The interesting finding was that the male population were not just circumcised (complete removal of foreskin) or uncircumcised (intact foreskin) but almost half of the men surveyed in the study had straight or longitudinal cuts which resulted in the foreskin shriveling on either side of the cut and hanging loosely on the ventral underside of the glans (8). In addition, majority of the men and women in that study preferred clinic-based circumcision or cutting procedures performed by qualified health workers (8).

The results also showed that majority of those who had a cut (to foreskin) underwent the actual operation outside of health clinics (8). The health system in PNG is not set up to provide routine MC operations for men. Health facilities in PNG are often under-staffed, ill equipped and poorly managed (1, 15, 16). Thus, it was possible that MC was unavailable at health clinics in PNG and men were accessing alternative forms of the procedure (such as longitudinal cuts) at settings other than health clinics. In addition, the study results demonstrated that many men in PNG were having foreskin cut for cultural reasons including initiation into manhood. These men were usually cut at initiation seclusions, beside rivers or in the bush (8). Further, the results indicated that men from communities that did not traditionally have penile cutting ceremonies were also practicing foreskin cutting, indicating that foreskin cutting was widespread in PNG (8, 17-19).

Figure II. Full (complete) and partial (incomplete) foreskin cuts



a: longitudinal dorsal foreskin slit, complete ('straight cut'): resulting in lateral retraction of the foreskin, complete exposure of the glans and redundant skin at sides and undersurface of the penile shaft
b: longitudinal dorsal foreskin slit, incomplete ('V cut'): resulting in partial exposure of the glans and 'V' shaped opening

Image from <https://doi.org/10.7448/IAS.20.01/21358>

1.5. The national policy forum on male circumcision and priority recommendations

The evidence gathered from all MC studies in PNG (including the study involving CM) were discussed at a national policy forum in Port Moresby (the capital of PNG) in 2011 (20). It emerged from that forum that a number of key areas regarding MC in PNG needed further investigation and understanding before a MC program was considered. It was unknown for instance whether a MC program in a country with extensive penile-cutting practices would actually have a positive impact. Similarly, the implications of this intervention (MC) to women and the capacity of the national health system to implement or support a MC scale-up program in PNG was unclear.

The priority recommendations following the policy forum therefore included conducting further investigations to expand the evidence base of MC in PNG. In particular, investigating the likely impact of a MC for HIV prevention program in a country with nearly half its adult male population having existing longitudinal foreskin cuts or partial circumcision was critical. It was also recommended that

harm reduction to men preferring MC in PNG is prioritized and captured in the national male circumcision policy (20). The method of reducing the risk faced by men who chose MC, however, was uncertain at that stage.

1.6. Ongoing research following the male circumcision national policy forum

Significant progress to provide further research evidence has been made following the national policy forum in 2011. The MC researchers in PNG were able to show that HIV prevalence was significantly lower in men with longitudinal cuts or partial circumcision compared to men with intact foreskin (19). In addition, a mathematical modelling study – conducted using data gathered from the MC studies in PNG – showed that the impact of a MC for HIV prevention program in PNG was not going to be as high as expected given the high prevalence of partially circumcised men in the country (21).

Michelle Redman-MacLaren conducted her PhD on the implications of MC for women in PNG, including for HIV prevention. Transformational-grounded theory study design was applied and the results indicated that although many women know about MC and other penile practices, including their effects in families in PNG, their ability to act on that knowledge was limited by the social, cultural and economic contexts in the country (22). However, women were prepared to act (on the knowledge of MC and penile-cutting practices) if the penile procedures were to affect their safety including the safety of members of their families (22-27). Thus, women in general in PNG were supportive of a MC for HIV prevention program in the country.

Rachael Tommbe conducted her PhD on the health systems aspect of MC delivery in PNG (30, 31). A multi-method study was employed and the results show that the health system has the basic requirements to support a MC rollout program in PNG. There are challenges though, some of which have to be addressed prior to the start of such a program. These challenges include clear policy directions from relevant authorities, training of health workers and the need to make available additional required resources such as surgical instruments and autoclaves. In general, thus, it was possible for the national health system to support a MC for HIV prevention program in PNG.

Clement Manineng (the author of this thesis) conducted his PhD on a method of reducing harm to men choosing MC in PNG. That study investigated the possibility of integrating safe MC within traditional MICs and establishing a modified form of those rites for HIV prevention. Details of that study are provided below.

1.7. Integrating medical male circumcision within male initiation ceremonies in Yangoru-Saussia: the formal study

The integration of MMC within traditional MICs was a concept that could not only respond to a key national policy recommendation to reduce harm to men undergoing foreskin cutting outside of health settings, it also presented a way forward to attempt the re-establishment of previously ceased MICs for HIV prevention in traditionally-circumcising communities in PNG, that community leaders in East Sepik Province were alluding to in the ‘Traditional best practice for HIV prevention study’. Integrating MMC within MICs was therefore a concept that sought to use a modern but safe surgical procedure to re-establish a traditional practice that in combination (MC + MICs), presented a holistic approach (conceptually that is) to HIV prevention in traditionally-penile-cutting communities in PNG. MICs were traditional avenues at which young men underwent training and coaching to lead responsible lives as adult men (32-35).

However, it was uncertain whether this idea to integrate MMC within traditional MICs would actually work. Foremost, questions on the acceptability of modifying tradition or even to revive a practice that has previously been ceased needed answering. This required asking questions on two levels (i) cultural, and (ii) bio-medical. It also required investigating how these two levels can be balanced to achieve both sociocultural and bio-medical outcomes. In particular, it was vital to establish whether local people would support the proposition to substitute traditional penile-cutting operations that involved excruciating pain, substantial blood loss and significant risk of death with modern MMC, which was essentially painless, bloodless and harmless. In addition, it was critical to investigate whether it was feasible bio-medically (in terms of the rate and type of complications) and culturally, to provide a modern procedure within a sacred traditional activity, which are often staged in secret locations deep in the forest. This study was therefore conducted to assess the acceptability and feasibility of integrating MMC within MICs for HIV prevention in Yangoru-Saussia, a district in PNG that was known to have penile-cutting MICs.

This topic then was ideal for a PhD research project and the researcher (CM) was perfectly placed to undertake this research project and be considered for a doctoral qualification. By then, CM was deeply involved in the research projects ‘Traditional best practice for HIV prevention study’ and ‘Acceptability of MC for HIV prevention in PNG study’, both of which anchored CM into the space to be the lead researcher in the new study. In addition, the research skills of CM had by then been

raised to a level required to undertake a higher degree study. The research projects CM was involved in included numerous research workshops (covering topics such as ‘research methods’, ‘data analysis’ and ‘writing for publication’) that contributed to raising CM’s research skills. With these skills and the experience in researching MC and MICs, CM applied and was successful in securing an Australia Awards Scholarship to undertake a Doctor of Philosophy study at James Cook University in Cairns, Australia in 2014. The research question, aims and objectives of the doctoral study are provided below.

1.7.1. The research question

Is it acceptable and feasible to integrate MMC within traditional MICs in Yangoru-Saussia, PNG?

1.7.2 The research aims

1. To assess the cultural acceptability of integrating MMC within revived MICs for HIV prevention in Yangoru-Saussia, PNG.
2. To assess the practical feasibility of integrating MMC within MICs for HIV prevention in Yangoru-Saussia, PNG.
3. To assess the short-term impact of a MMC-integrated MICs on HIV prevention and cultural preservation in Yangoru-Saussia, PNG.
4. To investigate the association between MC and sexual risk behaviours among men in PNG.*

*It should be noted that due to paucity of information on the sexual practice of men in PNG and the uncertainty surrounding a counter increase in sexual risk behaviour following MC, this research project had an additional undertaking (research aim 4 and objective 5) to examine existing data from the large ‘Acceptability of male circumcision in PNG study (19).

1.7.3. The research objectives

1. To gauge the views of cultural leaders regarding the integration of MMC into traditional MICs in Yangoru-Saussia in East Sepik Province, PNG.
2. To assess the views of members of the general community regarding the integration of MMC into traditional MICs in Yangoru-Saussia in East Sepik Province, PNG.
3. To assess the operational feasibility of integrating MMC into traditional MICs in Yangoru-Saussia in East Sepik Province, PNG. Operational feasibility assessment includes access to the ceremonial site, localities necessary (beds, lighting, insect screening, and sterilization tools), ‘time taken per procedure’ and the rate and type of complications.

4. To gauge community leaders' views about the socio-cultural impact of the 'MMC-integrated' MICs.
5. To identify and compare sexual risk behaviours (particularly 'unprotected sex and 'sex with multiple partners') between circumcised and non-circumcised men in PNG. This objective was to inform the researchers on whether it was safe to proceed with the intervention, given that it would be unethical to do so if foreskin cutting would lead to increase in sexual risk behaviours. Thus, this objective was addressed upfront in Part One of this PhD study.

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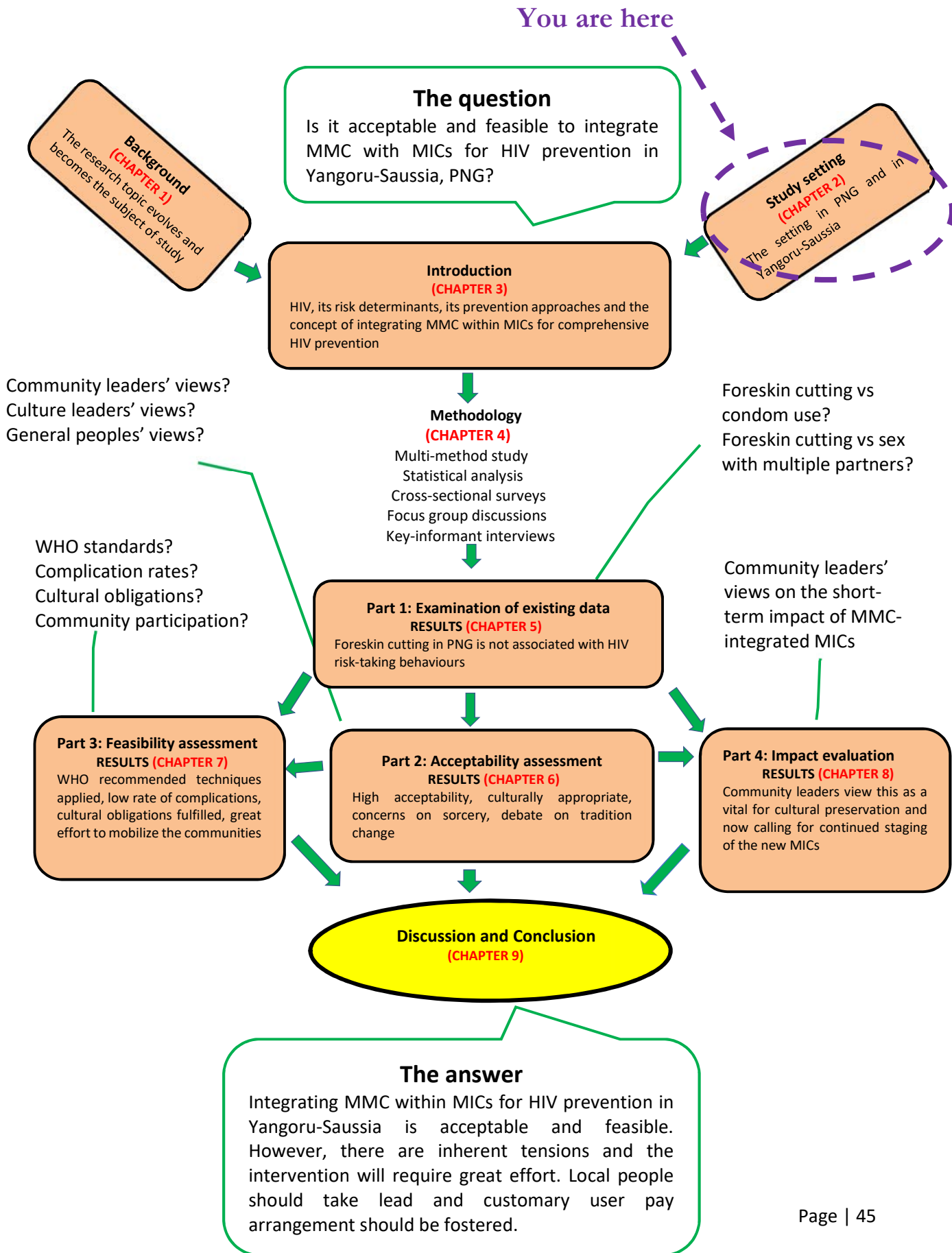
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Main points

- This chapter showed how the topic of this study evolved.
- Context-specific interventions against HIV were sought in PNG.
- Male circumcision appeared to be a promising intervention against HIV
- Community leaders in Yangoru-Saussia recommended using previously ceased MICs for HIV prevention.
- Reviving the MICs involved substituting the unsafe traditional penile cutting practice with MMC. However, it was not known if this change was culturally acceptable and practically feasible.



2. The study setting

Summary

The previous chapter (1) was the 'Background' which described how the research topic 'Integrating MMC within MICs' evolved and became the subject of this study. Context-specific approaches were being sought for HIV prevention in PNG. In Yangoru-Saussia, a modified MMC-integrated MICs was a suitable method for comprehensive HIV prevention that needed to be assessed. In this chapter, I will outline the study settings in PNG (the country of study) and in Yangoru-Saussia (the district of study). The chapter will include descriptions on the service delivery systems as well as the historical events that shaped the prevailing sociocultural conditions in the country and in the district of study.

2.1. Papua New Guinea

Papua New Guinea (PNG) is a Pacific Island country situated in the tropics just south of the equator and directly north of Australia (1, 2). There are over 800 tribal groups and similar number of distinct languages (3). The country is abundant in natural resources including oil, gas, gold, copper and nickel. A significant number of the world's flora and fauna are also found in this country. The country has thus been one of the last frontiers when it comes to wild life and harvesting of natural resources.

Large mining ventures have supported the economy of this low-to-middle income country in the Pacific prior to and after its independence from Australia in 1975 (3). Despite considerable revenues generated from the mining operations, the country has been struggling to keep its service delivery mechanisms functional (3, 4). A significant challenge in service delivery is that majority of the population (some 85%) live in rural areas in communities that cannot be easily reached by road (3). Other important factors affecting service delivery in PNG include deterioration of government systems including health and education, rapid population growth, corruption and the great diversity in sociocultural and religious practices. The following paragraphs provide further details of PNG as a nation and its development challenges.

2.1.1. First inhabitants

Archaeological evidence suggests that humans first arrived on the island of New Guinea (which includes the West Papua Province of Indonesia) more than 70,000 years ago (5). Some of these people made their way inland and occupied the fertile valleys of the mountainous interior including Waghi Valley (of Western Highlands Province in PNG) where some of the world's first farming practice were said to have taken place (6, 7). These inland people have, however, remained without much outside contact (because of their remote locations and rugged surroundings) until the early 1900s when Christian missionaries from the northern coast started journeying on foot into the interior of the mainland (8).

2.1.2. First contact

Portuguese and Spanish explorers Jorge de Menezes and Yñigo Ortiz first visited the Island of New Guinea (the eastern half of which is the mainland of PNG) in the 16th Century (8). These early European explorers named the island New Guinea because of the natives' resemblance to the dark-skinned frizzly-haired people of Guinea in Africa (8). It was not until about three centuries down the line that Christian missionaries and traders began having increasing interest in New Guinea and its inhabitants.

Catholic missionaries first landed at Woodlark Island off the coast of Milne Bay in eastern New Guinea in 1847 (8). This Mission Station at Woodlark Island was closed some years after that first landing because of malaria and other tropical insect-borne diseases that affected the mission work. Nearly fifty years after that in 1896, the Catholic missionaries known as Society of Divine Word (SVD) established their mission station at Alexishafen in what is now Madang Province. From that mission station, the missionaries, with assistance from local guides, started to explore their surroundings and made foot patrols into the mountainous interior, contacting for the first time, the local tribes of the PNG Highlands (8).

Thus, Europeans established permanent presence in New Guinea towards the end of the 19th century. The western half of New Guinea was then occupied by the Portuguese and was referred to as Dutch New Guinea. The eastern half of the island was divided and the German New Guinea Company under the authority of the German government occupied the north while the south was occupied by England and its former colony Australia (9, 10). The northern half of PNG was therefore historically referred to as German New Guinea or Kaiser William's Land (after the ruling German leader). Likewise, the

southern half was called British New Guinea. The southern half was later renamed Territory of Papua when the British government gave Australia full authority to govern that part of the island and its inhabitants. The western half of New Guinea became part of Indonesia at the end of Portuguese occupation (9, 10).

2.1.3. Geography

PNG is few degrees south of the equator in the WHO Western Pacific region. Its western land border is shared with the Papua Province of Indonesia. To the south lies Australia (and the Coral Sea) and to the east, across the Solomon Sea, is the sovereign state of the Solomon Islands. The large islands surrounding mainland PNG include New Britain, New Ireland and Bougainville to the east, and Manus to the north. These islands including the main island of New Guinea are located within what is known as the 'Pacific ring of fire' where high-rising volcanic mountains are common, some of which erupt and displace whole village communities.

PNG has a total land area of 462,860 square kilometres (3). Rugged mountains collectively referred to as the Central Cordillera (of the Island of New Guinea) make up most of the interior of the PNG mainland. Numerous streams emerge from these mountains and form mighty rivers that feed great expanse of swamplands as they snake their way, through wide valleys and plains, to the sea. The biggest rivers in the country are the Sepik River in the north and Fly River in the south.

Much of the country (excluding the cold, mountainous areas of the Highlands) consists of dense tropical rainforest. PNG is currently ranked third in the world in terms of the size of rainforest and what climate scientists refer to as 'the lungs of the earth' (11, 12). These vast forested areas sustain abundant variety of life and contribute to the great diversity in flora and fauna known in PNG. These forested areas, however, are logged at a massive scale often by unregulated foreign companies, increasing the rate of extinction of unique species of flora and fauna (11).

2.1.4. The people

The indigenous people in PNG are part of the larger Melanesian Islander group that includes the people of the Solomon Islands, Vanuatu, Fiji and the Papua Province of Indonesia (13). Melanesians generally have dark skin with black frizzy hair, although a genetic mutation has resulted in some people especially those occupying the many islands to the east (of mainland PNG) to have blond hair (14). Similarly, dark skin is not universal. Some people groups appear to have lighter skin, especially people of Central and Milne Bay Provinces (in the Southern region), which help to explain the early migrations

of people across the Pacific. These people of lighter complexion appear more like Polynesians who occupy the hundreds of islands in the central and southern aspect of the Pacific Ocean.

Figure III – Map of Papua New Guinea showing the location of Yangoru-Saussia district



Image from <https://mapcarta.com/29660096/Map>

2.1.5. Regions, provinces and administrative capitals

There are four geographical regions (Highlands, Southern, Momase and New Guinea Islands) and twenty-two provinces in the country (4). The Highlands region consists of six provinces (Eastern Highlands, Western Highlands, Jiwaka, Southern Highlands, Hela and Enga) located in the hinterlands of the mainland. The Southern region consists also of six provinces (Western, Gulf, Central, Milne Bay, Northern and National Capital District in Port Moresby) situated in the coastal areas to the south of the mainland. The Momase region is made up of four provinces (Morobe, Madang, East Sepik and West Sepik) that are situated in the coastal areas to the north of the mainland. The New Guinea Islands region is made up of five provinces (East New Britain, West New Britain, New Ireland, Manus and North Solomons) located on the major islands to the east and north of the mainland. The North Solomons Province is now the Autonomous Region of Bougainville (AROB) after a longstanding armed conflict with PNG over the Panguna mine (15).

There are administrative and political headquarters or capitals in each province. Port Moresby city located in the Southern region is the biggest city and the nation's capital. It is situated north of the Coral Sea and is about 90 minutes flight from Cairns, Australia. Port Moresby is one of the fastest growing cities in the Pacific region. It is also one of the most dangerous cities to live in given the high rate of crime. However, the unique geographical landscape offers tremendous opportunities in real estate and related business. The growing population also pushes the growth of political, economic and social activities in the city (4).

Lae is the capital of Morobe Province (which is in Momase region) and it is the second largest city in PNG. Lae is also the industrial capital of PNG and hosts the main seaport for the provincial capitals of the Highlands region. All the provincial capitals in the Highlands region are connected with each other and to Lae city by road. The great Okuk Highlands highway goes from Lae to Goroka (in the Eastern Highlands Province) and through Kundiawa (in Simbu Province) to Mt Hagen (in the Western Highlands Province) where it divides, and the north route goes to Wabag (Enga Province) while the south route eventually goes west to Mendi (Southern Highlands Province) and Tari (Hela Province). Because of its unique position in the Okuk highway, Mt Hagen city has become the industrial hub of the Highlands region and is the third largest city in the country.

2.1.6. Major highways

The Okuk highway is often referred to as the lifeline of PNG. This is because of the significant role this highway has in the economy of the country (16). Major mining ventures located in the highlands rely on the highway for the transportation of incoming and outgoing materials. The mining projects include the Porgera Gold mine in Enga, the Kainantu Gold mine in Eastern Highlands and oil and liquefied natural gas projects in the Southern Highlands and Hela Provinces. The Okuk highway is also the vital link for the flow of large quantities of vegetables and fruits from the fertile highland valleys to consumers in coastal towns and villages (16). Moreover, this highway is important for the transportation of the 'green gold' or betel nut (and its accompaniments: mustard seed and shell-derived calcium oxide powder) from coastal producers to inland consumers.

Another significant highway on the mainland is the Ramu highway, which branches off the Okuk highway at Watarais (border of Morobe, Eastern Highlands and Madang Provinces) and goes north west to Madang town in Madang Province. This highway continues along the North coast of Madang to Bogia, an outlying government station situated near the border of East Sepik Province.

In the south of mainland PNG, there are two major highways. The Magi highway runs from Port Moresby along the east coast to outlying stations near the border of Milne Bay Province. The Hiritano highway runs along the west coast from Port Moresby city to Kerema town in Gulf Province. Apart from enabling the transportation of building materials and store goods between major centres, the Hiritano highway is vital for the supply of betel nut and local produce from villagers in Gulf and Central Provinces to retailers and consumers in Port Moresby city. Road construction is underway to link the Hiritano Highway in Gulf Province to the Okuk Highway in Southern Highlands Province. Creating this link will enable majority of the cities and towns on the mainland to be connected to each other and to Port Moresby (the capital city) by road (17).

2.1.7. Population

From the last national census in 2011, there were 7,275,324 people living in PNG (18, 19). This was an increase of 40% from 5,190,786 people in the previous census in 2000. At that rate of increase, the population in the country is expected to reach the 10 million mark by 2021 when the next national census is conducted. The annual population growth rate was therefore 3.1%. People living in the Highlands region made up 39% of the PNG population. People in Momase, Southern and Island regions made up 26%, 20% and 15% respectively (18). In terms of province, Morobe was the highest populated at 0.67 million people followed by Eastern Highlands and Southern Highlands Provinces, each of which had populations that were over 0.5 million. Manus was the least populated of the Provinces with 50,231 people (18).

Also from the 2011 population census, there were 108 males to every 100 females (18). The median age of the population was 21.8 years. Children under the age of 15 years numbered just under 3 million of the population. One household in PNG consists on average of five people. Less than 15% of the population live in urban centres while the rest live in rural and often isolated village communities. There are, however, significant increases annually in rural-urban migration with consequent expansion of settlements around the towns and cities (20-23). Most of these migrants are not finding work and this is contributing to the high unemployment rates in the country (21). People in the rural areas on the other hand lead subsistence lifestyles, although most are also making an income from the sale of garden produce at urban markets or from the sale of cash crops to agricultural exporters (23).

2.1.8. Economy

PNG is considered a rich country in terms of its natural resources (24-26). About 60% of the nation's revenue is generated from extraction of oil, liquefied natural gas, gold and other minerals (26). Current mining ventures in PNG include the Kutubu Oil Project in Southern Highlands Province, the PNG LNG Project in HELA Province, Ok-Tedi Copper and Gold Mine in the Star Mountains of Western Province; the Porgera Joint Venture Gold Mine in Enga Province; The Hidden Valley Gold Mine in Morobe Province; The Ramu Nickel Mine in Madang Province; and the Lihir Gold Mine in New Ireland Province. The Frieda River Gold and Copper Mine in West Sepik Province and the Papua LNG project in Gulf Province are also expected to commence operations following final negotiations between the national government, project developers and landowners (27-29).

A large portion of the government revenue is also generated from agriculture projects including the production and sale of coffee, cocoa, copra and palm oil (30-31). Coffee is the main cash crop of people in the Highland villages. Cocoa and copra are the two main crops for people on the coast, including the islands. These cash commodities are produced and sold largely by small-scale farmers in the rural areas. Palm oil on the other hand is produced and sold by big companies working in collaboration with smallholder farmers (32-35). There are three main palm oil operations in PNG; the New Brittan Palm Oil in West New Brittan Province, the Higaturu Palm Oil in Northern Province and the Ramu Palm Oil in Madang Province (34). To add to that, an oil palm plantation, which is said to be the biggest in the region is being developed in East Sepik Province (36, 37).

In the first few decades after political independence, the country's budget was supported directly by Australian government through the AusAID program (3). However, the Australian government became increasingly concerned about allegations of corruption and fraud at all levels of the government and public service mechanism in PNG, which led to a change in the delivery of aid. Rather than injecting funds into the government's annual budgets, the Australian government chose to fund and support the service delivery mechanisms in the country. Currently, money from AusAID to the value of AU\$546.3 million is going towards promoting effective governance, promoting economic growth, and enhancing human development. Under the 'enhancing human development' category, the Australian government through Australia Awards PNG is supporting 1,300 Papua New Guineans to improve their capacities and receive relevant qualifications at participating institutions in Australia and PNG (3).

2.1.9. Education

Some 40% of adults in PNG are unable to read and write (38). Reading and writing a simple sentence in English or Tok-Pisin (the local lingua franca), is therefore an impossible task to a significant number of adults in the country. This high rate of illiteracy is expected to decline in the ensuing years as the country grows economically and the national education system is strengthened.

Early missionaries who wanted local people to read and understand the stories and prophecies in the Holy Bible started the teaching of literacy skills to local people (8). The colonial administrators also taught this skill to selected locals to get them to assist in administrative work. In the lead up to the country's independence, however, it was important that the local people that constituted over 800 different ethnic groups, learnt to read written instructions and to express their views in writing. Hence, schools around the country began to be established (8-10). At the time of independence in 1975, there were two tertiary level institutions: the University of Papua New Guinea (UPNG) and the PNG Institute of Public Administration (PNG IPA), which were receiving students mainly from four national high schools (Sogeri, Passam, Kerevat and Aiyura). There are now six officially recognized universities and some 100 technical colleges, and vocational training schools around the country (40, 41).

The approach to education in PNG was initially standards or objective based (41, 42). This means that there were pre-determined learning objectives for every subject and level of education and that students were assessed and passed, repeated or failed based on those objectives. In this method of education, the students were provided with the resources and the environment to learn and teachers, head teachers and head masters or school principals facilitated this learning process. Over the years, however, it became evident that the learning process at many schools across the country was ineffective. In general, learning resources like textbooks were lacking, school facilities were deteriorating and there were persistent issues with teaching personnel (42). In addition, teacher absenteeism and their inability to facilitate high quality teaching and learning was becoming evident. The education system appeared thus to contravene the need and aspirations of young people to progress in education and contribute meaningfully to society. It also became apparent that basing learning on pre-determined objectives limited the extend and depth of young peoples' learning particularly to real life situations (43).

In an effort to improve young peoples' learning, the education department introduced the outcome-based education (OBE) in the year 2000 (43). It was reasoned that the ability to learn and succeed was not the same for all students. This meant then that the objective based curriculum that is delivered within a set timeframe was a design that would not allow every student to succeed in their learning. In other words, some would fail. So it was a matter of identifying and grouping the students in terms of their learning ability (including pace) so that every student could do well and be successful. The OBE curriculum was therefore 'student-centred' as opposed to 'standards-based' curriculum, which was 'content-focussed'.

In the OBE curriculum, the teachers play a guiding role rather than an 'instructor' role in the pupils' learning. The teachers guide the pupils in activities that enable the students to work towards their specific needs and aspirations. However, many people including some teachers were very critical of the new curriculum. Some people indicated that most schools in PNG did not have the required resources to implement the OBE curriculum. It was pointed out for instance that many schools lacked fully equipped libraries. In addition, internet and other resources that could support a curriculum that places emphasis on pupils rather than the content was not accessible in most schools around the country. This and other issues led to a decision by the national government to repeal the OBE curriculum, after some 15 years of its use in the country (42, 43).

In an effort to increase the number of people with basic education in the country, the PNG government introduced the 'tuition fee-free education policy' in 2012 (40, 41). Through this policy, children attending primary and secondary schools around the country were not required to pay any fees. Many people were happy with this policy decision given that children from financially disadvantaged parents, particularly those in the rural areas and urban squatter settlements were now able to access some level of education that otherwise would have been inaccessible. The implementation of the policy, however, was problematic. Funding support to schools were inconsistent and in some instances students were sent home when schools ran out of money and essential services such as water and electricity were cut (42, 44).

2.1.10. Religion

PNG today is said to be a Christian nation. Christian missionaries started their evangelical work in PNG towards the end of the 18th century (8). Some 200 Christian denominations may now be operating in the country, each with its own unique doctrines. The denominations with the largest

following, however, are the Roman Catholic Church, the Lutheran Evangelical Church, Seventh Day Adventist (SDA) Church, United Church and the Pentecostal Churches (8). It is common thus to see people dressed and going to church on their designated day of worship, the SDAs on Saturdays and the other churches on Sundays. Not everyone attends church though. There are many people who are still uncertain about the introduced religions and evangelical work is continuing in PNG.

Apart from introduced religion, ethnic groups in PNG had their own unique ways of worshipping a higher being. The Huli people of the Highlands for example, worshiped a deity who in their native language was called Datagaliwabe (45, 46). Datagaliwabe according to Damien Arabagali was the source of all things just like the Christians would refer to God as the 'alpha and omega' (46). This according to Arabagali was a major reason for Christian worship to be assimilated easily into the Huli culture. It was reasoned to the locals that, what the Christians (mainly Catholics) were trying to establish was the same thing that they (local people) have been doing but this time, it was going to be formally organized and led by specially trained people called priests and missionaries (45, 46).

2.1.11. Traditions and languages

PNG is a nation of great diversity in indigenous culture and language. There are over 800 ethnic groups and similar number of local languages (8-10). Many traditional practices have, however, been discontinued and some are observed only on special occasions such as cultural festivals. Cultural festivals are staged usually in conjunction with Provincial Cultural Shows where traditional attires, body paints and sacred dances are displayed to the public. Significant cultural festivals in the country include the Mt Hagen Cultural Show, the Goroka Cultural Show, Morobe Cultural Show, the Madang MABORASA Show, The East New Britain National Mask Festival, The Milne Bay Kenu and Kundu Festival and the East Sepik Garamut and Mambu Festival (47-48).

The Hiri-Moale Festival is a major cultural event the nation's capital, Port Moresby. This festival is staged in remembrance of the Hiri Trade where the Motu-Koitabu people of Central Province sailed in the iconic Lagatoi canoes and exchanged goods with people along the Gulf of Papua or present day Gulf Province (49-51). History has it that the wife of Edai (the man who organized the maiden voyage) waited faithfully on her husband for many weeks despite the mocking she received from people in the village who thought that the seafarers had perished. However, upon sighting the Bogebeda (as the first Lagatoi was called), she dressed in her finest attire and danced on the veranda of her house shouting

jubilantly ‘Hedihoroha Bogebeda’ (52, 53). Thus, a large part of the Hiri-Moale Festival today involves traditional beauty pageants that dance on the Lagatoi shouting ‘Hedihoroha Bogebeda’.

2.1.12. Politics

Sir Anthony Siaguru sums up politics in PNG in his book titled ‘The Great Game in PNG’ (54). It indeed is a great game involving high profile people, powerful political parties and lots of money. Favours are made and large amounts of money (particularly state funds) are spent to remain in power in this great game in PNG (54, 55).

The great game is not only played on the floor of parliament but also in the local communities where voters have to be satisfied through receipt of goods and services. Thus, formulation of policies, the enactment of laws and even the delivery of government services, has somewhat become secondary to satisfying the wishes of the voters. To play the game and stay in power means that the prime minister, who is voted into office on the floor of parliament by elected parliamentarians, distributes ministry portfolios according to the size of the political parties and regional representation rather than by merit (55). This has had profound impact on the function of state departments and consequent shortfalls in national service delivery mechanisms.

Initially of PANGU political party and later as founder of the National Alliance Party, Grand Chief Sir Michael Somare served as Prime Minister of PNG on four occasions. First, from 16 September 1975, on the day of political independence, to 11 March 1980, second, from 02 August 1982 to 21 November 1985, third, from 05 August 2002 to 13 December 2010, and fourth, from 17 January 2011 to 4 April 2011 (54, 55). Sir Julius Chan of the People’s Progress Party led the government from 11 March 1980 to 02 August 1982, and from 30 August 1994 to 22 July 1997. The other prime ministers and their respective political parties and terms in parliament include Mr Paias Winti of the People’s Democratic Movement Party, from 21 November 1985 to 4 July 1988, and from 17 July 1992 to 30 August 1994; Sir Rabbie Namaliu of PANGU Party, from 4 July 1988 to 17 July 1992; Sir Bill Skate of Peoples’ National Congress Party, from 22 July 1997 to 14 July 1999; and Sir Mekere Morauta of Peoples’ Democratic Movement Party, from 14 July 1999 to 05 August 2002 (54-56).

On 02 August 2011, Mr Peter O’Neil of the Peoples’ National Congress Party (PNC) became the Prime Minister following a political impasse that arose when then Prime Minister Grand Chief Michael Somare was seeking medical attention overseas (55-57). Mr O’Neil was formally elected as Prime Minister in the 2012 national elections and again in the 2017 elections. However, under the reign of

Mr O'Neil from 2011 to 2019, the country's national debt increased to unprecedented levels. Thus, despite some popular policies like 'tuition fee-free education' and 'free-health-care', and massive infrastructural developments especially in the nation's capital, Mr O'Neil failed to master the numbers and his then Finance Minister Mr James Marape became the 8th Prime Minister of PNG (58, 59).

2.1.13. Governance

PNG is said to be a vibrant democracy (54, 55). The structure of governance is adopted from the British Government System. PNG is part of the Commonwealth group of countries that recognize the Queen of England as the Head of State. The Queen is represented by the Governor General. Being the representative of the Head of State, the Governor General is responsible for officiating at important national events including the formation of government on the floor of parliament (3, 4, 9, 10).

There are three levels of Government: National, Provincial and Local (3). The National Government is made up of 111 representatives or members of parliament elected from the 89 district electorates and 22 regional or provincial electorates. Provincial representatives are also called Governors of the Provinces and are the heads of the Provincial Governments, which consists of elected local level government presidents. The latter in turn are the heads of local level governments, which are made up of elected ward councillors. The general elections in this country are held every five years, the last of which occurred in 2017(60).

2.1.14. Significant historical events

World War 2 – New Guinea campaign

In the New Guinea campaign of World War 2, Japanese forces invaded the main islands east of PNG mainland and established a major base in Rabaul (East New Britain Province) in January 1942 (61-64). From there, the Japanese forces moved to the mainland and made advances towards Port Moresby. An attempt to capture Port Moresby by sea was stopped by the United States Navy in the great Battle of the Coral Sea (63, 64). The Japanese forces then attempted a land invasion through the Owen Stanley Range in July 1942 and were met by the Australian ground troops at Owen's Corner (of Sogeri) and driven back (65). The Allied Forces then attacked the Japanese in the battle of Bona-Guna and were victorious, but casualties were high (66). In September of the same year, the Japanese forces attacked a major Royal Australian Air Force base in Milne Bay (the eastern tip of New Guinea) but were forced back by the Australian army (61, 62). The Australian forces continued to engage the

Japanese troops throughout the north of PNG until the Japanese forces surrendered in 1945 (61). Some 216,000 Japanese, Australians, Americans and Papua New Guineans lost their lives in that war. Soon after the war ended, the Papua and New Guinea territories were merged into a single administrative territory under the Papua New Guinea Provisional Administration Act 1945-1946 (61, 62).

Independence

The merging of the two territories of then Papua and New Guinea was formally approved through the Papua and New Guinea Act 1949 and it became the Territory of Papua and New Guinea (10). This Act allowed for the establishment of an administration that included a Legislative Council, a Judicial Committee, a Public Service System and a Local Government System (9, 10). For the next two decades, PNG remained under Australian administration. However, preparations were made for Australia to eventually handover the Territory to Papua New Guineans for self-determination. The framework of the economic recovery and activities leading up to independence was based on the World Bank report titled 'Economic Development of the Territory of Papua New Guinea 1964' (67).

Part of the preparations for independence included the establishment of the University of Papua New Guinea and the Administrative College, which is now known as Papua New Guinea Institute of Public Administration (PNG IPA). These institutions were established to train the next generation of national leaders to lead the new nation and to help unify the people who were of diverse ethnic origins. In 1965, some young Papua New Guineans attending these tertiary institutions including the founding Prime Minister Grand Chief Sir Michael Thomas Somare formed the 'Bully Beef Club', which later became the PANGU Party (10). PANGU stood for 'Papua and New Guinea United'. First elections in PNG were held in 1972 where Michael Somare of PANGU Party was elected Chief Minister and was responsible for leading PNG to self-government and to independence. After much preparation and lobbying, PNG was formally declared an independent state on 16 September 1975 (10).

The Bougainville conflict

The Panguna Copper Mine on Bougainville was first established by Australian company Conzinc Rio Tinto in 1972 and was managed by an Australian-based shareholder company known as Bougainville Copper Limited (BCL) (68, 69). The PNG government at that time had a 20% share in that venture. The revenue generated (from that 20% share) contributed nearly 50% of the nation's total earnings

and was thus vital to the economy. As PNG attained independence and as it began developing its human resource and infrastructure, people began asking questions about equitable resource sharing.

In what is now the Autonomous Region of Bougainville, the indigenous landowners of Panguna (the site of the giant copper mine) began to ask questions about the mining operation that was eating away a large chunk of their land (69). They were concerned about environmental damages and endangering of human lives and thus, were not satisfied with receiving less than 5% of PNG's share of revenues from the mine. In effect, the landowners were receiving less than 5% of the amount the PNG government was receiving from BCL.

Tensions increased over the years and in 1988, the indigenous landowners turned violent (69). The PNG government tasked the mobile squad of the PNG Royal Constabulary to control the situation, but these trained men were outnumbered and the situation became volatile. By then, the indigenous landowners with the help of other Bougainvillean men have formed a rebel fighting group known as the Bougainville Revolutionary Army (BRA), whose Commander in Chief was Mr Francis Ona, who was also a major landowner of Panguna (69). It became evident then that there was a full-scale rebellion on the island of Bougainville and the PNG government recalled the police mobile squad teams and deployed the army (69).

The PNG Defence Force was determined to defeat the BRA and fighting went on for many years (69, 70). Many Bougainvilleans took refuge back on the mainland in PNG and in the neighbouring Solomon Islands. In 1997, the government of PNG, under the leadership of Sir Julius Chan, sought to end the conflict by contracting mercenaries from South Africa (70). However, this decision was highly criticised by neighbouring Australia and the international community. Within the PNG Defence Force, this decision plummeted the morale of the soldiers. Rather than spending money to equip the army, the government was opting to hire foreign mercenaries to destroy its own citizens. The PNG Defence Force led by then Commander, Brigadier General Jerry Singirok, therefore revolted against this decision and launched 'Operation Rausim Kwik' which – assisted by Australia – led to the impounding and deportation of the mercenaries along with their heavy military equipment. This event was followed by a massive public demonstration that saw Sir Julius Chan resigned as Prime Minister of PNG on 27 March 1997 (70).

Many families in PNG were affected by the war on Bougainville. In fact, the scar of the conflict still remain especially among families who lost loved ones during the war. The researcher (CM) was also

affected. CM had an elder brother named Wesley Morris who was a soldier in the Infantry Division of the PNG Defence Force. Wesley and his team of six soldiers were sent to the conflict zone on numerous occasions. Wesley did survive the war and was a hero especially to his immediate family. He was not left unharmed though. Wesley developed post-traumatic seizures that on a tragic day caused his fall from a height that left him paralysed and confined to a wheelchair. He died eventually in 1999 and was buried in the army cemetery outside his hometown, Wewak in East Sepik Province. CM named one of his sons Wesley Morris in remembrance of his soldier elder brother who like many of his comrades paid the ultimate price of the war on Bougainville.

The PNG LNG Project

The US\$19 billion PNG LNG Project in the Highlands of PNG (operated by Exxon Mobil) is among the biggest LNG project in the Asia-Pacific region (71). It was negotiated and established during a term of political stability from 2002 to 2011 under the government led by Grand Chief Sir Michael Somare. To ensure that the PNG LNG Project was implemented, the PNG government, which at that time had insufficient funds to contribute to the project, offered to exempt the project from export taxes for a period of five years beginning from the year of first gas shipment (72).

The first gas shipment of the PNG LNG Project left the nation's shores in May 2014 aboard the Spirit of Hela gas-shipping vessel. Since then more than US\$50 million worth of gas is being shipped out of PNG every week (72). This project was predicted to expand the national economy and significantly improve the lives of people in the country, particularly the owners of the land on which the gas was extracted (72, 73). However, many years have lapsed since the first shipment of gas, and the landowners have yet to receive a fair share of the wealth generated. This, together with enmity between landowner groups over the legitimacy to project benefits, has led to the build-up of arms in the project area (74). In one instance, armed landowners forcefully shut down a project plant site, but the operations resumed after successful negotiations between group leaders and PNG government representatives (74).

2.1.15. Unfavourable state of affairs in Papua New Guinea

The state of affairs in PNG is perhaps best depicted by the health indicators. Life expectancy at birth for an average male was about 64 years in 2016 compared to global average of 72 years (75, 76). In addition, maternal mortality is among the worst in the world. Some 215 women die of pregnancy related complications per 100, 000 live births compared to Australia and Indigenous Australia at 6 and

14 deaths per 100, 000 live births respectively (77, 78). Similarly, infant mortality is among the highest in the Asia Pacific region (78). Further, the doctor to population ratio of 0.5: 15,000 (79-81) is unacceptably low compared to about 4 doctors per 1000 people in Australia (82). Some indicators of health such as life expectancies have been improving over the years while most have deteriorated as a result perhaps of the growing population.

A combination of factors have led to the seemingly unfavourable state of affairs. These include controversial government policies and ill-advised decisions, diversion of essential funds, political instability, corruption, unchecked population growth, rise in rural-urban migration, the growing unguided youth population and the rapid change from traditional to modern ways of life with consequent deterioration of traditional social structures. In the next few paragraphs, I will outline the effects of rapid population growth and clash of cultures.

Rapid population growth

According to the 2011 census, the population in PNG has been increasing very fast at an annual growth rate of 3.1% (83). The physical infrastructures including health and education facilities and the human capital needed to provide the vital services to the expanding population have, however, been slow. This mismatch essentially means swarming of the available facilities and services and over-worked or burned-out service personnel. It also means a decline in the quality of services rendered at public facilities. For instance, patients presenting to the Emergency Department of Port Moresby General Hospital in the nation's capital may wait for many hours because the facility is becoming overwhelmed (84). The population in Port Moresby has more than doubled in 20 years while the Emergency section of Port Moresby General Hospital and the number of its staff has remained largely unchanged (85-86).

The education system is also hard-hit by the expanding population. Increasing numbers of children are enrolling into schools every year while the number of schools, their learning facilities and teachers have somewhat remained stagnant (23, 87). A common occurrence would be that a learning facility designed to cater for 500 pupils would now be forced to accommodate 1000 pupils. To the teachers, this essentially means one of two things: come up with innovative ways to continue the quality of teaching and learning for higher number of students or get burned-out trying to maintain the quality using existing methods. A key challenge, however, is to improve or maintain the working and living

conditions of the teachers, some of whom have been serving in isolated rural communities for many years without remuneration (23).

Maintenance of law and order has also been challenging (89, 90). The court and police services — like the rest of the public service in PNG — have been overwhelmed. With under 5000 police officers and a population of above eight million, a police officer in PNG is expected to do the job that would normally take four police officers to do in developed and well-resourced countries (90). These police officers in PNG are mostly living and working under sub-standard conditions and are often poorly equipped. To make matters worse, crime and violence have been on the rise particularly from youths, many of whom are unable to continue education or to find a paid job. Crime and violence have also escalated because the traditional social structures that once provided some form of control on youth behaviour has waned in the mix of cultures in contemporary settings, especially around towns and urban settlements (89).

Clash of cultures

PNG is going through rapid transition from traditional to modern way of life (89). In that transition, the different cultural practices are rubbing onto each other as well as to introduced or modern practices. Most traditional practices have been in decline as people are inclining towards modern ways and letting go of the traditional structures that once formed the axis of livelihoods in the communities (91). It also means that the values associated with traditional practices are waning and are perhaps contributing to the behaviour-related issues faced especially among the growing population of unguided youths in the country (92).

The Christian churches in PNG are important in buffering the effects of clash in cultural practices. Peaceful and harmonious living is encouraged by constantly conditioning the minds and worldviews of the people to the Christian ways or the ways promoted by Christ Jesus who is God and the author of the Christian movement (8). However, an increasing proportion of the population in PNG are not actually participating in the Sunday or Saturday church services these days. In addition, many people being exposed to modern ways and worldviews and coming under-pressure from capital-driven activities, are unable to factor in church activities, including the beliefs propagated through the church doctrines. Thus, many people in this setting may be outside of the churches' reach when it comes to indoctrination of values for peace and harmonious living.

2.2. Yangoru-Saussia

Yangoru-Saussia as a district was merged from two administrative centres in the study area: Yangoru and Saussia. These centres, like most administrative centres in East Sepik Province (and PNG), were combined into a district and electorate to facilitate better representation of people in the district at the National Parliament. Historically, the district is significant in that General Adachi, Commander of the Japanese 18th Army initially surrendered on 11 September 1945 to the Allied forces in this district in East Sepik Province, at a slope now known as ‘Surrender Hill’ at Yangoru Station, although the official surrender of his Samurai sword took place at Wom Beach, outside Wewak town (93, 94).

2.2.1. Study location

Yangoru-Saussia is one of six districts in East Sepik Province of PNG (see map in Figure III) (95). It is separated from the northern coastline by the Prince Alexander Mountains. To its south runs the great Sepik River. The geography is mostly of rolling hills from the highest peak of the Prince Alexander Range (Mt Turu) at 1,100 meters above sea level, to the plains near the Sepik River. The hilly areas consists mostly of tropical rainforest whereas the flat plains has vast expanse of grassland interrupted by forested areas of varying sizes (96).

2.2.2. People and language

There were 58,878 people living in Yangoru-Saussia district in 2011 (83). An increase of some 10,000 people is expected in the next census in 2021. Male to female ratio was 1:1 approximate. There were about five persons per household in the district (83).

Most people in the district speak subdialects of the Boiken language, in particular the Yangoru, Kubalia, Kunai and Nagum sub dialects (96). Others especially those living in villages bordering Maprik district to the west speak Bukiye or Abelam languages of Maprik district. Local people can also be identified by their geographical locations and cultural practices. The Numbo people occupy the southern foothills of the Prince Alexander Range, Sausse people occupy the rolling hills and flat lands north of the Sepik river (and south of the Numbo people), the Jamie inhabit the flat areas adjacent and west of the Sausso and the Bukiye dwell in the hilly areas west of the Prince Alexander range (see map in Figure IV) (96). The cultural practices are similar, accept that people inhabiting lands bordering Maprik and Yangoru-Saussia districts display a mixture of Maprik and Yangoru-Saussia

traditions that involve the yam cult, whereas others in the district portray more of the original Numbo or Sausse traditions that involve competitive exchange of pigs (96).

Figure IV. Map of Yangoru-Saussia showing the study location



Image from <https://mapcarta.com/29660096/Map>

10 kms

The indigenous languages are being replaced by Tok-Pisin and English languages which respectively are the local vernacular and official language of instruction. These introduced languages are becoming more popular especially among the younger generation, indicating that without deliberate efforts, the local dialects would disappear altogether. The Boiken language of which five sub-dialects are spoken in Yangoru-Saussia district is one of the main languages of the Ndu language family in East Sepik Province (96). Two subdialects (Coastal and Island) of this language are spoken by people along the West Coast of Wewak district and the Muschu, Walis and Tarawai islands of the Bismark Sea (96).

2.2.3. Lifestyle

Traditionally, the people led a subsistence lifestyle growing food in gardens and catching wild animals and fish in the forest and creeks. The staple food was taro and yam, supplemented by sago, breadfruit, bamboo shoots and other edible plants from the forest (97). Pigs were often raised around the villages in preparation for initiation and competitive exchange ceremonies known respectively as 'Hwelembo' and 'erli warliya' in the Yangoru subdialect of the Boiken language (96-98).

Today, most people are balancing their time and effort between subsistence farming and income-generation activities including the production and sale of cocoa beans. In 2018, Yangoru-Saussia led cocoa production in East Sepik Province, earning K12 million (or USD4 million) (99). A small proportion of the population working in the government service delivery mechanisms or are employed in funded district projects such as road construction and building of schools. There is thus a good degree of cash flow in the district which means people are able to buy store foods such as rice and canned fish to complement their taro and yam staple foods.

Debate and politics have been part of people in this district for many generations (100). Most villages comprising several hamlets in Yangoru-Saussia have a ‘Kumangiye’ (in the Yangoru dialect), a designated spot – usually in the middle of the village – for public debate. All disputes arising for instance over land or relationships are deliberated and debated upon at this space in the village. Men who have mastered the art of public speaking or ‘Paiye-Nangri’ (usually after the 3rd stage of the male initiation) use their skill in these debates. However, the issues are most often not resolved and with time, the debated issues lose their significance and are most often forgotten (100).

The ‘Kumaingie’ avenue for conflict resolution is still widely practiced today, although most people are turning to the court systems especially with serious cases such as murder or issues with large amounts of money. In addition, today at the Kumaingie, it is not only the ‘Paiye-Nangri’ experts who debate the issues of conflict. Others in the communities including ward counsellors, council committee members, LLG Presidents, business owners and women leaders are also free to express their views in village debates. Even the local Member of Parliament (MP) may at times (depending on the Member’s availability) be found at a village Kumaingie to help resolve an issue of conflict (100).

2.2.4. Religion

Yangoru-Saussia is predominantly Christian, although there were traditional religious activities in the past such as honouring of ancestral spirits associated with the ‘Hwelempo’ initiation ceremonies (96-101). Divine Word missionaries of the Catholic Church arrived first in the district in the 1930s and set up churches including the Negrie Catholic Church near Yangoru Government Station (98). Majority of the local people thus identify with the Catholic denomination. Other denominations with significant following include the Assemblies of God (AOG), Seventh Day Adventist (SDA) and Pentecostal Revival Churches.

Big evangelical meetings are often staged at selected locations in the district in an effort to recruit followers into the churches and to strengthen the beliefs of active members of the churches. The different denominations sometimes have a common agenda and are brought together for a combined Christian meeting. A meeting like that has been occurring on an annual basis at Yangoru Government Station since 2014 where local leaders including the elected MP and all churches in the district gather for prayer, reconciliation and dedication (102).

2.2.5. Politics

Yangoru-Saussia is a patrilineal society, which means women generally do not have much say in local politics. This male dominance, however, has somewhat declined in the cultural mix occurring in contemporary communities in the district (100). Women can now talk and take lead in matters that were handled exclusively by men. In the past, political power rested mostly on the big-men of the communities. These are men with authority and standing in the communities; those who command the debates at the 'Kumaingie', including clan leaders, cultural experts and peace mediators (100).

Today, power has largely shifted from the 'big-men' of traditional system to the leaders of the modern system including local political leaders, administrators, managers of service systems, the 'educated elites' and people with money and wealth (100). Hence, the 'Kumangiye' now is mostly dominated by leaders of the modern system who can use all of the three languages spoken in the district (Boiken, Tok-Pisin and English) to express themselves. The big-men of the past system on the other hand are impeded in expressing their views given their inability to use Tok-Pisin and English as fluently as today's leaders. However, the big-men are still very influential especially in matters to do with tradition and land (100).

The political head of the district is the local MP who is voted into office during national elections conducted every 5 years. The last election occurred in 2017 where Mr Richard Maru was elected for his second term as MP representing the people of Yangoru-Saussia (102). Under the leadership of Mr Maru, the district has progressed well particularly in infrastructural development including upgrading and sealing of roads around Yangoru Government Station, establishment of treated water supply and connection of homes and buildings around the station to uninterrupted electricity (104-106).

Politics is a complex issue in Yangoru-Saussia especially during national elections. Families and members of the same clans may oppose each other at campaigns leading up to the elections. In

addition, some people and groups openly sell their votes (60) to the highest bidder, which means that those contesting the elections have to be in possession of large sums of money. Alternatively, people will vote a candidate whom they have previously received something from. Thus, a candidate going to elections without inputs in people's lives or without giving them something, be it money, food or a special favour, is unlikely to be successful even with sound policy platforms.

All developments and programs occurring in the district may therefore technically come under 'government' or 'opposition' depending on the major source of support. Government refers to those siding with the elected MP and 'opposition' refers to every other group or individual who have contested the last election and those others who would challenge the sitting MP in the next election. It goes then that all projects that are not of government are seen as opposition attempts at political point scoring. Such programs, even if the intention was not political, are unlikely to be supported by the District Development Authority, whose chairperson is the local MP.

2.2.6. Administration

Yangoru-Saussia is governed by the Yangoru-Saussia District Development Authority. This Authority comprises the local MP as chairperson, the presidents of the four local level governments (LLGs) and a chief executive officer who is also the district administrator (95). All developments and major decisions affecting the district goes through this authority. The four LLGs or political divisions are East Yangoru and West Yangoru in the Yangoru half of the district and Numbo and Sausse in the Saussia half of the district. Yangoru Station, which is fast becoming a township, is the administrative head quarter of the district.

2.2.7. Government services

Roads

The Sepik Highway traverses the district. It connects the district to major trade centres – Maprik town (in Maprik district) to the west and Wewak town (in Wewak district) to the north east, the Provincial capital of East Sepik Province. There are numerous feeder roads connecting schools, health centres, churches and most of the big villages in the district to the main Sepik Highway.

Health facilities

There are four major health facilities. Saussia and Kubalia Health Centres in the Saussia half of the district and Yangoru and Naksimingal Health Centres in the Yangoru side of the district. These health facilities are usually manned by health extension officers (HEOs) and nursing officers. HEOs are a category of health workers trained specifically for the setting in PNG to perform multiple health related roles including of a clinician, a facility manager and a coordinator of public health at rural health facilities in the country (108). The health centres run essential services including Maternal and Child Health, Immunization, Health Promotion and Curative Services that include the management of infection and trauma cases. Clients with life-threatening conditions and those requiring specialized care are referred to the Wewak General Hospital, the Provincial Referral Hospital located in Wewak town.

The major health centres are supported by about ten ‘community health posts’. Community health posts as the name suggests are clinics operated at designated locations within large communities. Up to three health workers (usually nursing officers) could run these clinics providing outpatient care to the sick and the injured and supervising delivery of babies for women with uncomplicated pregnancies (107). Although vital to health service delivery, these health posts were unable to be maintained and many have been closed. The health centres mentioned in the above paragraph are also facing resource constraints and are not fully functional.

Schools

In terms of education, there are three high schools in the district. Kubalia High School and Nagum SDA High School in the Saussia side of the district and Yangoru Secondary School in the Yangoru side. A School of Excellence for grade 11 and 12 students has been established recently at the district headquarters at Yangoru Station (105). Numerous primary schools in the district send their top performing pupils to the above-mentioned high schools. Like the health facilities, the schools in the district are facing constraints so that teaching and learning for students in the district have not been occurring as expected.

Law and order

Law and order has been a serious issue in Yangoru-Saussia with rise in violence and problems instigated mostly by youths under the influence of home-brewed alcohol and marijuana drug (109). The police personnel in the district have been boosted with regular engagement of mobile squad units from Port Moresby (the nation’s capital) that often employ heavy tactics including on-sight shooting

of suspects and burning of villages in a bid to control crime and violence caused by unguided youths in the communities (110). Apart from hiring of the mobile police, the district administration is establishing a mobile squad base to increase the presence of these special police officers in the district (111). The district is also supporting a Resident Magistrate to preside over the increasing number of court cases in the district.

2.2.8. Cultural preservation initiatives

A number of cultural preservation initiatives were undertaken in the district to help maintain some best practices of the past. One such initiative was the establishment of the Boem-Sara Cultural Preservation and Tourism Promotion Centre. This local initiative had the full backing of the sitting MP and the Tourism Promotion Authority of PNG. It ran cultural training programs for people, especially men interested in acquiring traditional skills including the use of slit-gong drums in relaying coded messages (112-113). This project was initiated and led by Rex Narenen, a community leader in Boem-Sara village.

Another project worth mentioning was the building and opening of a 'Haus Tambaran' or spirit house at Belmore village. Although the local MP supported, this initiative was largely a self-help project sponsored by contributions from local people including from relatives working in towns and cities across the country (114). Through this project, the local leaders were seeking to bring back some order and discipline among the youths in their communities. It was reasoned that the young men in the communities today need to know their origins; their genealogy and practices of the past that give them their unique identities (114).

2.2.9. Communalism to individualism

The people in Yangoru-Saussia have traditionally been a communal society (94, 100). According to German Anthropologists Allen Freudenberg, people in the district referred to themselves only as 'ni-ne', meaning 'we' which signified the collective (115, 116). The 'ni-ne' of the times past, however, is changing and becoming mixed in contemporary communities. People today are trying to balance between modern interest of materialism – which largely means individualism more than communalism – and traditional interest of the collective. Thus, people may not always rise up to a collective or 'community' activity but will often ask about what benefit they as individuals will receive from their involvement in a community-oriented project (60).

In shifting from the 'ni-ne' or collective of traditional times to the modern world of individualism and materialism, people in general have become somewhat disinterested when it comes to activities of common interest. In politics and election campaigns for instance, people are asking 'what is in it for me?' In the proposed new MICs, people will also be asking the individualistic question. The initiative to re-establish the MICs thus is an intervention that may help in reawakening the collective interest or 'ni-ne' among the people. The catch though is that, the 'ni-ne' must first be rejuvenated among the people to have them corporate and work together to re-establish their valued Hwelembo MICs.

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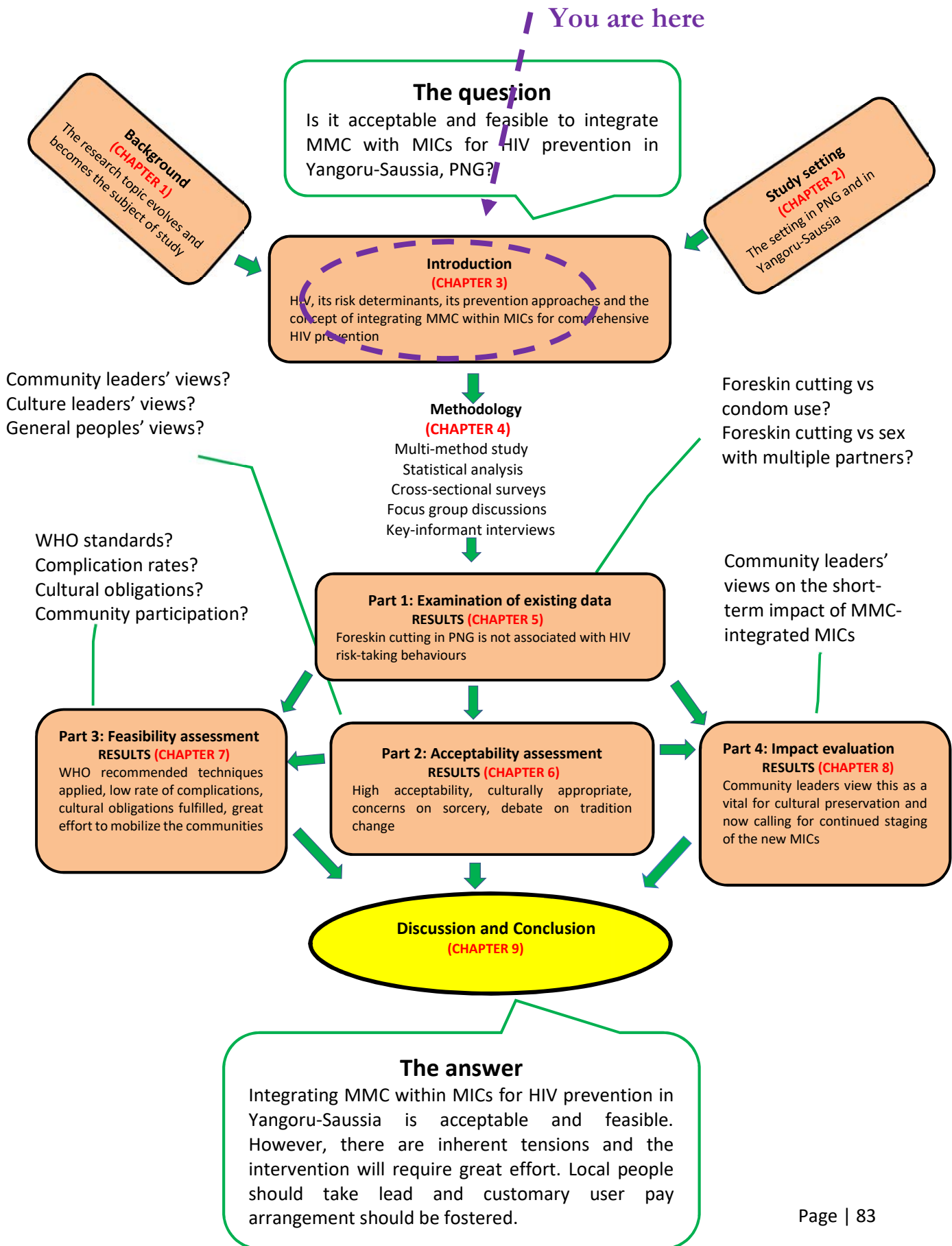
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Main points

- This chapter described the setting – in PNG (the country) and in Yangoru-Saussia (the district) – at which this study was conducted.
- PNG is a low-to-middle income country consisting over 800 distinct tribal groups and majority of the population live in rural and often unreachable areas
- Health, education and other essential services have been struggling even though significant amounts of money is being generated from the country's natural resources.
- The country is rapidly transitioning from traditional to modern and breakdown of traditional social structures is manifesting in the increased social disorders especially among the male youths.
- Yangoru-Saussia is a typical rural district in PNG going through rapid traditional-to-modern change with resultant decline in traditional social structures and rise in individualism as opposed to communalism of past communities.



3. Introduction

Summary

The previous chapter (2) was the ‘study setting’ which showed that HIV prevention in PNG is complicated by great diversity in cultural and religious practices; isolated rural-placed populations; high illiteracy; declining service delivery systems; and increasing clash of modern and traditional cultures. In this chapter, I will justify the use of context-specific approaches to HIV prevention in PNG and introduce the idea of integrating MMC within MICs for HIV prevention. The chapter will begin with an overview of HIV including its risk-determinants and prevention approaches. It will then outline the HIV situation in PNG including the factors fuelling the spread of the disease in the country and how ESPAC has employed a culture-oriented approach to HIV prevention. This will be followed by the research question and the research aim and objectives.

3.1. The HIV challenge

Human immunodeficiency virus (HIV) is among the most serious sexually transmitted infections (STI) to affect humankind. Since the start of the epidemic, an estimated 75 million people have become infected and some 32 million people have died (1). At the end of 2018, approximately 37.9 million people were living with HIV across the world and deaths that year from the virus numbered 770,000 (1, 2). The vast majority of cases were reported from low-to-middle income countries. In some countries in Eastern and Southern Africa, significant proportions of populations were living with HIV (2, 3). In Swaziland for instance, 27.3% of the adult (15-49 years) population were infected in 2016 (4). Hence, some two-thirds of HIV cases across the globe were reported from Eastern and Southern African countries.

The virus is also associated with significant costs. It was estimated that US\$ 26.2 billion was required to respond to HIV in a single year in 2020 (2). The more the virus spreads among the people, the more it would cost in the care of the infected. Productive hours of infected employees would also be reduced, affecting business returns and impacting whole economies particularly in high-burden countries.

Although, there has been significant advances in the treatment of people infected with HIV, there is still no cure. The molecular make-up of the virus is such that anti-retroviral drugs are unable to destroy

the virus and have it cleared entirely from the body. Thus, prevention of viral transmission from infected people to uninfected persons is still key in the fight against HIV (1, 2).

3.2. The biology of HIV infection

HIV is a retrovirus. When it enters the body, the virus attaches itself to the CD4⁺ receptors of the T-Helper white blood cells, fuses with them and reconfigures their cell replication machinery to make more copies of itself (5, 6). The infected white blood cells soon become swollen with the increasing number of virus and eventually burst, releasing countless viruses into the blood stream (6). These viruses then enter other T-Helper white blood cells and the cycle continues. To prevent the replication of the virus, some infected T-helper cells are destroyed by cytotoxic T cells (CD8⁺ cells) of the body's immune system.

As more T-Helper white blood cells become infected and die, the immune system of the body becomes progressively weak so that the body is unable to defend itself against common infections (5). This is because T-Helper white blood cells coordinate the activities of all other white blood cells of the body's immune system. They are like the commanding officers in the military. Low levels of T-Helper cells means an immune response to infections and diseases will be uncoordinated and therefore largely ineffective (5). Thus, the immune system of HIV infected persons who are not on antiretroviral therapy (ART) are unable to ward off opportunistic infections that will eventually cause their death.

3. 3. Transmission of the virus

HIV is transmitted primarily through sexual intercourse (1). Transmission of the virus from infected mother to child is also common. Other less significant modes of transmission include drug injection, blood transfusion and organ transplant. The focus of this discussion, however, is on the primary mode of transmission –sexual (vaginal or anal) intercourse. During sexual intercourse, the mixing of sexual fluids facilitates virus crossover from infected to uninfected partners. As the sexual fluids of infected and uninfected partners mix, resident antigen presenting white blood cells in the sexual organ of uninfected partners identify the HIV viruses as 'foreign' and the virus is captured and eventually presented to the T-Helper cells to process and coordinate the appropriate protective immune response (6). The virus is not destroyed, however, and it – through the action of a special enzyme called 'reverse transcriptase' – multiplies within the T-Helper cell and spreads in the body.

3.4. Determinants of risk

Determinants of risk are factors or circumstances that put individuals and populations at risk of acquiring HIV (3, 7). These can be grouped broadly into behavioural, biological, demographic and structural factors. Details of each of these categories of risk determinants are presented below. Note, however, that ‘sexually transmitted HIV’ is the focus of this discussion. Hence, not much information is presented regarding risk determinants associated with other modes of HIV transmission.

3.4.1. Behavioural risk determinants

Behavioural risk determinants refer especially to sexual behaviours that put individuals at risk of acquiring HIV. Unprotected sex is considered a major risk determinant. This is because without the use of barriers such as condoms, sexual fluids are allowed to mix freely, which increases the likelihood of viral transfer from infected to uninfected sexual partners (3). Thus, the rate of transmission of HIV in a population may be determined by the behaviour and attitude of its sexually active citizens in accessing and using condoms. However, as will be seen in the paragraphs that follow, there are other determinants of risk that affect people’s attitude regarding condom use for HIV prevention.

Sex with multiple and concurrent partners is another major behavioural risk determinant. People having two or more sexual partners concurrently or at different points in life have higher chances of having sex with HIV infected partners compared to those who limit sexual activities to one partner (3). The rate of HIV transmission in a population is therefore also determined to a large extent on the number of sexual partners people have (5, 6). Moreover, like ‘unprotected sex’, the ‘sex with multiple and concurrent partners’ risk determinant is also influenced by other factors as will be seen in the ensuing paragraphs.

3.4.2. Biological risk determinants

Biological risk determinants refer to biological factors that increases the likelihood of individuals acquiring HIV. Anal sex is an important biological HIV risk determinant because the likelihood of HIV transmission is higher compared to vaginal sex. Bruises and tears of the rectal wall are common in anal intercourse. Although most of the anorectal injuries are small, they cause inflammation, which releases cytokines that attract large numbers of white blood cells to the injury sites. Increased presence of white blood cells means the likelihood of the virus infecting at least one of those white blood cells is increased several folds. Anal sex disrupts the biological make-up and function of the anorectal area and thereby increases the risk of HIV transmission particularly for the receptive partner (8).

Sexually transmitted infections (STIs) is another key biological risk determinant of HIV (9). Just as white blood cells migrate to sites of injury in anal sex, inflammation of the genitourinary tract caused by STIs (such as Chlamydia and Syphilis) increases the presence of white blood cells, particularly CD4+ lymphocytes. This means the detection (and processing) of HIV as a foreign antigen will occur much faster compared to a non-STI-infected genitourinary tract (5). In addition, STIs cause bruising and bleeding inside the genitourinary walls during sexual intercourse, which allows even more white blood cells to be involved in the detection and processing of the virus. The more white blood cells there are, the greater the likelihood of HIV transfer from infected to uninfected partners.

3.4.3. Demographic risk determinants

Demographic risk determinants include factors such as age, place of origin, employment status and the types of jobs people do for a living. Considering age, young people – particularly those transitioning through the turbulent teenage stage into adulthood – are at increased risk because most lack adequate knowledge of HIV and its methods of prevention. In addition, young people who in general are financially dependent on parents and guardians are unable to pay for condoms and other protective barriers of sexual intercourse. They also may not have the confidence to negotiate safe sex (10). Furthermore, the sudden surge in sex hormones (testosterone in males and estrogen in females) in the body as young people turn into adults increases the risk of HIV acquisition. This is because young people have yet to understand and master the sexual urges brought about by maturing gonads and elevated levels of sex hormones.

Employment status is also an important determinant of HIV risk. Unemployed people or those with limited employment opportunities often engage in transactional sex. This is because unemployment and limited money-earning opportunities places individuals at a disadvantage in terms of finances and the ability to pay for things one desires. Unemployed people are therefore more likely to engage in transactional sex or the exchange of sex for money, goods or special favors. Although some individuals engage in transactional sex with only one partner, others exchange sex with multiple partners thereby increasing the likelihood of HIV transmission.

The type of work people do is another risk determinant of HIV. Sex work for example, carries higher risk of HIV transmission compared to other jobs. Sex work often involves sex with multiple and concurrent partners. In addition, sex work may include unprotected sex – vaginal or anal –, which carries very high risk of HIV transmission (8, 10). Sex work also carries higher risk of acquiring STIs,

which as seen earlier, is associated with increased likelihood of HIV transmission. Similarly, driving and other jobs requiring frequent travel and long absences from faithful sexual relationships carry high risk of HIV transmission compared to jobs with limited travelling. Hence, employment status and the type of job people do are important HIV risk determinants.

3.4.4. Structural risk determinants

Structural factors affecting HIV risks include the prevailing socioeconomic and political conditions and the religious and cultural practices of the people (11). These factors influence an individual's ability to avoid contracting the virus. For instance, unfavorable economic and political conditions could push some women into trading sex for money. The women who would have sex with paying clients are often unable to negotiate safe sex because clients frequently demand sex without condom (11). In addition, if economic and political conditions were not favorable, condoms, lubricants and other 'safe-sex' products would be inaccessible to many sexually active people (11, 12).

Furthermore, socioeconomic and political conditions determine the effectiveness of vital service systems such as education and health. A functional and effective education system helps in minimizing HIV risk by facilitating learning – particularly of young people who are the most vulnerable group – of HIV and its prevention methods (10). Similarly, a functional and effective health system contributes to reducing HIV risks particularly by coordinating an effective response against the disease, including prompt detection and treatment of new cases of HIV (11, 12). Prevention by treatment with anti-retroviral therapy is the focus of current HIV prevention efforts globally (3).

Religious practices are also significant structural determinants of HIV risks (13, 14). These practices influence peoples' behaviour because they often teach their own code of conduct that people who identify with them must follow. The Catholic Christian denomination for example advocates for sex to happen only in marital relationship for procreation and therefore are opposed to the use of condoms. Thus, even if condom is accessible, religious teachings like that (described above) will dissuade people from utilizing it. On the other hand, religious teachings that discourages multiple and concurrent sexual relationships or sex outside of marriage are helping to limit the HIV risk of individuals and the spread of HIV in communities. Most religions in the world including Christianity and Islam have laws that protect their followers from harm associated with sexual activities and desires.

The other important structural determinant of HIV risk is culture (15-17). Cultural practices – like religious practices – influence the way people live their lives including how they behave and relate with

one another (15). In many cultures around the world, sex with someone other than a lawful husband or wife is strictly forbidden. In some cultures, however, there are occasions at which unmarried and married people alike are allowed to engage in sexual practices of their choosing, some of which could lead to acquisition of HIV. For example, during the yam festival in the Samarai islands of PNG, it is culturally appropriate for sexually active people of all ages and relationships to have sex with partners (single or multiple) of their choosing (18). HIV prevalence in the Samarai islands and the rest of Milne Bay Province has, however, been low compared to the Provinces in the Highlands region where sex outside of marriage is strictly prohibited (19).

A cultural practice that contributes to the high HIV prevalence in the Highlands region in PNG is polygamy (17). Although sex outside of marriage is prohibited, it is acceptable for men in the Highlands to marry more than one wife for as long as he is able to provide for the needs of all his wives and the children they bear. Then, if the husband or one of the wives acquires HIV, all partners in the matrimony have a higher risk of acquiring the virus. Condoms are hardly used in such marriages because people are just living their lives as per their cultural context but unaware of the deadly virus that could be transmitted sexually by the marital partners (17).

It is important to note at this stage that some cultures have behaviour-guiding traditional practices that often determines how an individual behaves and relates with other people in the communities (20-22). The most significant of behaviour-guiding traditional practices are the initiation ceremonies wherein young men and women coming of age are put through ritual activities to condition them into adopting culturally appropriate behaviours. Participants of initiation ceremonies are expected to live by the statutes of their ceremonial training, which in most cases includes avoiding behaviours (such as sex with multiple and concurrent partners) that will jeopardise their reputation and health.

3.5. HIV prevention interventions

Prevention is key in the fight against HIV (3). This is because as mentioned earlier, no treatments available today can effectively clear HIV in an infected person's body. HIV prevention interventions may be categorized into bio-medical, behavioural, structural and combination approach interventions. The following paragraphs will provide details of each of these interventions.

3.5.1. Bio-medical interventions

Bio-medically, there are four prevention interventions: Prevention by treatment with antiretroviral therapy (ART), male circumcision (MC), treatment of sexually transmitted infections, and use of

condoms (23). The current global focus on HIV prevention is prevention by treatment with ART (3). ART is primarily intended to improve the health and well-being of individuals infected with HIV. While achieving that primary objective, ART also plays a crucial role in reducing viral transmission in the communities. When HIV infected persons are placed on ART, the treatment suppresses HIV replication and leads to lowering of viral levels in the body so that the likelihood of viral transmission from infected to uninfected persons during sexual intercourse, and at pregnancy and childbirth, is reduced substantially (24, 25). This is a significant epidemiological intervention considering that HIV infected adults continue engaging in sexual relationships (26, 27). There are a number of setbacks though, the most important of which is accessibility. Some 38% of people living with the virus were unable to access the vital drugs in 2018, which means more effort is needed to increase ART coverage in the ensuing years (1). Drug resistance and incomplete viral suppression are also important challenges that limit this bio-medical HIV prevention intervention.

This proportion of people living with HIV (PLHIV) on ART is expected to increase depending on the commitment of relevant authorities to organize the purchase, distribution and dispensing of the required ART drugs. In low-to-middle income countries, prioritizing a high ART coverage for PLHIV is difficult considering competing development interests such as building of roads and improving of health and learning facilities, which are critical in ensuring service delivery and maintaining standards of living for all citizens (28). Furthermore, ART drugs are expensive so that most PLHIV in low-to-middle income countries are unable to afford the drugs. Most of the world's HIV are reported from low-to-middle-income countries (29).

The other bio-medical HIV intervention with significant public health impact is MC. Historically, MC was done in some communities for cultural and religious reasons (30). In the last two decades, ecological and experimental studies found that MC also had health benefits, including of preventing heterosexual HIV transmission to men by as much as 60% (31-37). Subsequent mathematical modelling showed that circumcising large numbers of men would lead to significant reductions in HIV transmission and avert costs that would otherwise go into managing the prevented HIV cases (38). Thus WHO/UNAIDS recommended that MC is scaled up in areas having high HIV prevalence, low MC rates and heterosexual sex as main mode of transmission (39). MC is a simple, relatively inexpensive procedure that is administered only once whereas prevention by treatment with ART involves costly drugs that require daily and lifelong intake and constant monitoring by health workers.

However, a scale-up of MC also has challenges, including cost and acceptability among the population considered for this intervention.

The actual mechanism by which MC prevents vaginal HIV transfer to men is still under investigation. An important theory, however, is that MC reduces the likelihood of HIV transfer by limiting the aggregation of white blood cells near the surface of the glans penis (40-43). This is because when uncircumcised, there is increased moisture levels under the foreskin and microbiome quantities may be high around the glans penis (which attracts white blood cells) whereas when circumcised, the moisture levels and amount of microbiome around the penile-head could be less because the foreskin covering is no longer there. Hence, there is less accumulation of white blood cells near the surface of the glans penis (40, 41). Another important theory is that when circumcised, there is increase in keratinization of epithelial cells around the glans penis, which toughens the penile head against abrasions during sexual intercourse. Abrasions are openings at which viral particles from the infected female sexual partners can directly enter the blood system of the uninfected male partner. It is possible though that the theories described may all be contributing (in combination that is) to reducing HIV transfer from infected females to uninfected males during vaginal sexual intercourse.

3.5.2. Behavioural interventions

Behavioural HIV interventions are designed to directly influence peoples' behaviour so that they avoid contracting the virus. A large part of these interventions focus on increasing HIV knowledge among the people so that adequate knowledge of the disease could translate to greater preventive actions taken by the population at risk. These knowledge-increasing behavioural interventions included mass awareness campaigns that involved media advertisements, erection of roadside-billboards and the production and distribution of posters and pamphlets. Often in those mass awareness campaigns, the ABC prevention strategy is promoted. A: Abstain from sex, B: Be faithful to one partner who is also faithful, C: Always use a condom during penetrative sex (44).

Voluntary counselling and testing (VCT) is an important behavioural intervention, although it also serves as an avenue to detect and map the presence of the virus in the populations (45). Through VCT, clients receive factual information on HIV and they come to know their status as either positive (of HIV) or negative. Clients knowing their status is a powerful means of behavioural prevention given that those testing negative are expected to maintain their negative status by refraining from HIV risk

activities, while those testing positive would be placed on ART so that viral levels in their bodies are suppressed, reducing likelihood of transmission to other sexual partners.

It is becoming evident, however, that VCT services are only being accessed by those who feel a need to use this service. Hence, this intervention is not reaching the majority of the population, particularly young adults in low-to-middle-income countries (45). Similarly, it is known now that knowledge of the virus and its transmission alone is unable to prevent the spread of HIV in the communities. More effective HIV prevention involves going beyond increasing HIV knowledge to addressing the structural factors that determine the way people live and behave (7). For instance, even if people know the preventive efficacy of condom in HIV transmission and condoms are available at local pharmacy shops, they will not purchase and use it if they are financially handicapped or if the teachings in their religion oppose condoms.

3.5.3. Structural interventions

Structural interventions are designed to alter the context by which people live, making them more conducive for people to avoid contracting HIV (7, 11, 47). Structural interventions include enacting laws and making changes to improve economic situations and strengthen vital service delivery systems such as health and education (7, 11). Strengthening service delivery systems is particularly important in low-to-middle-income countries given that these systems are often weak and dysfunctional. However, system-strengthening interventions may require substantial funding and expertise, both of which are lacking in under-resourced countries. In addition, issues such as corruption and political instability in under-resourced countries makes strengthening of essential systems even more difficult (47).

Structural interventions also involve forming partnerships with organizations and groups in the fight against HIV (48, 49). For instance, partnerships are formed with business houses to promote HIV prevention in the workplace. Partnerships are important given that HIV is a crosscutting issue that affects everyone in the society. Partnerships are also crucial in the fight against HIV because partner organizations or groups could use their resources to extend the reach of HIV prevention programs. For example, a large proportion of the population in PNG can be reached with vital HIV prevention messages through partnership arrangements with Christian churches, given that the churches have large following in the country (50).

An important structural intervention occurring around the world is decriminalization of sex work and injection-drug use (47). Recognizing, legalizing and regulating sex work and injection-drug use provides an enabling environment for people engaged in these activities to protect themselves and others better. Decriminalizing sex work leads to better access to and increased use of condoms and other products of safe sex among sex workers and their clients. Similarly, decriminalization of injection drug use is expected to limit sharing of needles and lower HIV transmission among injection drug users (47)

Modification of cultural practices, particularly those that increase risks of HIV infection among a population are equally important structural interventions. For example, the polygamous culture of the Highlands region in PNG could be targeted perhaps through the enactment of laws that protect polygamy partners from acquiring HIV through marriage (17). It is a weighty challenge though to modifying cultural practices in settings that are struggling to preserve their cultural identities against the burgeoning tide of modernization.

Structural interventions could also include reviving or strengthening cultural practices that could contribute to HIV prevention. Reviving traditional initiation ceremonies for instance could boost HIV prevention given that these ceremonies – while providing behavioural guidance to young people – were vital for the upkeep of other valued cultural practices that collectively have an impact on peoples' values and the preservation of peace and harmony in the communities (20-22). Such an intervention could be supported in traditionally initiating communities that are fighting to maintain their unique cultural practices amidst the clash of cultures associated with modernization.

3.5.4. Combination approach interventions

Combination approach HIV intervention is where two or more HIV prevention programs are delivered in a single package (51, 52). The VCT HIV intervention mentioned earlier is a good example of a combination approach HIV prevention. It disseminates HIV information to clients and impels them (clients) to refrain from practices that would increase their likelihood of acquiring HIV. Combination approaches are expected to achieve better outcomes (compared to individual interventions) given that the risks in contracting HIV is influenced by many and often interrelated factors (51, 52). Combination approaches are also helpful in resource-limited settings given that these approaches enable scarce resources to be put to the best possible use. In other words, maximum

benefits are gained from the use of scarce resources through combination approaches as compared to standalone methods.

3.5.5. Context-specific and culture-oriented interventions

The other important consideration is the appropriateness of HIV interventions in relation to the context at which these interventions are applied. HIV interventions that do not cater for the context are unlikely to yield satisfactory results (53). This is because the target populations' acceptability and subsequent participation depends to a large extent on the relevance of the intervention to their context. For example, it would be inappropriate to campaign against people having sex with multiple partners among populations whose traditions allow for this sexual practice. Similarly, campaigning against polygamy may be a futile exercise in the Highlands region of PNG where the practice is culturally accepted. The promotion and distribution of condom, however, could be the most appropriate in those contexts.

Jenkins and Buchanan (2007) emphasise that culture and context matter in HIV prevention in the Pacific (53). This emphasis stems partly from the fact that cultural practices are quite diverse in the Pacific. This means that for HIV prevention to be effective, the diverse range of cultural practices are factored in the interventions and where appropriate, modifications are made to practices that place individuals at risk of HIV infection. Similarly, cultural practices that could help in the fight against HIV are encouraged, maintained or revived for context-specific or culture-oriented HIV prevention (54).

Culture-oriented HIV prevention refers to the use of cultural practices to prevent the spread of HIV (15-17). The main benefit of culture-oriented HIV prevention is its contextual relevance, which results in higher acceptability and greater community participation (as mentioned above). Culture-oriented HIV prevention is important particularly in settings that continue to value and observe their traditional beliefs and practices. A culture-oriented HIV intervention that was shown (in a pilot study) to have potential for high-impact was the adaptation and use of the 'Senga' traditional sex communication in modern-day sexual behaviour communication among adolescent females in Rural Uganda (55). It was found in that pilot study that the intervention was readily accepted and that the participants who went through this intervention had improved knowledge, attitudes and practices in relation to HIV and other STIs (55, 56).

The other traditional practice in Africa that is receiving increasing attention in relation to HIV prevention is traditional circumcision. Initiates at traditionally-circumcising manhood rites are at great risk because of the possibility of HIV transfer (when same cutting tools are used on initiates) and adverse events including bleeding, penile amputation, sepsis and death (57-59). To minimise the risk of cross-infection with HIV and adverse events occurring, health authorities at respective nationalities are intervening with measures such as the training of traditional cutters and use of sanitized instruments (60). Among the Xhosa of South Africa, some initiates are avoiding the high risk traditional circumcision by undergoing clinic-based medical circumcision as part of their initiation (into manhood) process (61). However, the men felt that those who underwent traditional circumcision and took the risks required to become men would stigmatize them.

3.6. Papua New Guinea and the HIV challenge

PNG is one of the most complex countries when it comes to dealing with diseases associated with human behaviour such as HIV. In the paragraphs that follow, I will highlight the challenge of responding to HIV in PNG. Information about HIV in PNG, including its prevalence is presented upfront to help the reader appreciate the seriousness of the disease in the country.

3.6.1. HIV in Papua New Guinea

HIV was first detected in PNG in 1987 (62). Over the ensuing years, new cases of HIV increased exponentially forcing the country to take drastic actions through the enactment of laws and establishment of a coordinated national response against the virus. Although the epidemic in PNG has now been scaled down from 'generalized' to 'concentrated', occurring mostly among key at-risk groups such as sex workers, the prevalence among the general population was still quite high compared to other countries in the Western Pacific region (63). In 2016, the prevalence of the virus was estimated at 0.9% and some 46,000 people were living with the virus in PNG (63). Also in 2016, there were about 2,800 new infections and 1,100 HIV related deaths (63).

In 2013, HIV prevalence among PNG adults was 0.65% (64). However, this prevalence varied by region, between urban and rural areas and among the different risk groups. In 2012, the prevalence in the nation's capital, Port Moresby (1.04%) was twice as high as the national prevalence (0.52%) and the Highlands (0.60%) and Southern (0.63%) regions had two times higher prevalence compared to Momase (0.25%) and New Guinea Island (0.26%) regions (64). In the general population, HIV incidences were higher among people aged 15-49 years. Among special groups, sex workers and men

who have sex with men were the most affected. It is interesting to note at this stage that the regions having lower HIV prevalence had MICs that included penile operations and foreskin cutting, whereas the regions having high HIV prevalence did not have penile-cutting traditions (19).

The primary route of HIV transmission in PNG is unprotected heterosexual intercourse between infected and uninfected partners (65). Unprotected sexual intercourse refers to penetrative sex without the use of male or female condoms. Sex (unprotected or protected) with multiple and concurrent partners is also common and this is aiding the transmission of HIV in communities in PNG (65). Recent studies have found that heterosexual anal intercourse may also be an important route of HIV transmission in PNG. A survey among female sex workers showed that anal sex, most of which occurs without barriers, was highly prevalent (66). Unprotected anal intercourse carries higher risk of HIV transmission given that the anorectal area is more prone to tears and abrasions – that facilitates ease of virus transfer between sexual partners – during penetrative sex compared to the vaginal orifice and canal (8).

Vertical transmission of the virus is common but much less compared to transmission via heterosexual intercourse (65). Mothers infected with the virus are likely to pass the virus to their babies during the birth process and at breastfeeding. The contexts of women and mothers in PNG (as will be seen later) is contributing to mothers becoming infected and increasing the occurrence of vertical HIV transmission.

Young adults – who make up the bulk of the population in the country – are the most vulnerable group (to HIV infection) among the general population in PNG (65). Being young, they are at risk of acquiring the virus given that most young men and women are still learning to manage the challenges of life, including of learning to cope with maturing gonads and consequent surges in sex hormones (67, 68). In addition, majority of the young adults in PNG have limited knowledge levels of HIV and many are financially disadvantaged so that they are unable to negotiate safe sex (69).

Females among the young adults are particularly at risk in PNG (70). Most cultures and traditional structures in PNG place women at a disadvantage so that young women have less opportunities – compared to young men – at education, employment and negotiation of safe sex. Less opportunities at education and employment most often leads to alternative means of earning a living including of exchanging sex for money (70).

3.6.2. The response to HIV in Papua New Guinea

The PNG National AIDS Council is established

For an orchestrated effort to counter the rapid spread of HIV and prevent what many predicted as a looming disaster in PNG, the national government with assistance from development partners established the PNG National AIDS Council (PNG NAC) in 1997 (65). This government organization was responsible for coordinating all work related to HIV in PNG including prevention interventions, research and capacity building of the personnel who were going to contribute to controlling HIV in the country. The PNG NAC consisted of the National AIDS Council Secretariat (which was the central coordinating agency) and Provincial AIDS Committees (PAC), which were responsible for all HIV response activities at the Provincial level.

The order of operation in general for the National HIV response was for NACS to provide strategic directions and for PAC to implement the directives and report to NACS with results. Structure-wise, this arrangement had no issue. In terms of human resource, however, there was a huge challenge. People with appropriate skills-set and levels of knowledge were seriously lacking (71). This meant that a big chunk of the HIV response budget went into capacity building workshops to increase the level of skills and knowledge of HIV workers around the country (65). In addition, there was no reliable data on HIV in PNG to guide policy and planning. Hence, a significant percentage of the HIV funding was spent on researching HIV risk determinants and the interventions that had the potential to have high positive impact on HIV prevention in the PNG setting.

The actual HIV response and the impediments

The actual HIV response with prevention interventions, most of which involved dissemination of HIV information (at least in the initial stages) were impeded on many fronts. For a start, it was not possible to reach most of the people through this intervention since over 85% of the population lived in rural and remote locations, some of which were inaccessible by road. Then, there were difficulties posed by the great diversities in traditional cultures, languages and religious practices. Tailoring HIV information and prevention messages to each of the estimated 800 ethnic or language group – which could achieve better outcomes – was practically impossible. In addition, it was not possible to tailor HIV prevention messages to each of the 200 or so Christian denominations operating in PNG.

The HIV response in PNG was also impeded by inefficient functioning of essential government systems including the education system (71). A significant proportion of the population are still illiterate, which meant that the large amounts of pamphlets and posters produced and circulated, and the many billboards erected along roadsides throughout the country (for people to read) was unlikely to have a substantial impact in the peoples' knowledge of HIV, including its major modes of transmission and methods of prevention. It also meant that many people were unable to read and understand the instructions in important HIV interventions (such as ART treatment) on their own, which had implications on intervention outcomes.

In addition, the deficiency in the health system meant that, it was unable to accommodate the additional effort required to effectively deal with HIV including treating and caring for HIV infected persons and staging public health interventions such as mobile HIV counselling and testing services. The health workers were too few (and therefore over-worked), essential drugs were in short supply or delivery was inconsistent, and vital equipment were unavailable or dysfunctional due to lack of maintenance (71-73). On the positive side, however, the health system in PNG is one of the best there is in terms of its structure and the design it has in reaching even the most isolated communities with essential health services. The system only needed boosting with required resources including expertise and funding to counter HIV and other health challenges in the country.

Furthermore, the response to HIV in this country were impacted by crosscutting issues including poverty, violence and gender inequity. These were issues that were fuelling the spread of the virus, which when unaddressed would ward off even the best of HIV interventions (70, 73). It meant that HIV would continue to persist in the country for as long as the sociocultural and economic issues facing the country existed. This also meant that to effectively counter HIV and its threat in the country, it was the well-being of individuals and communities that should be targeted with appropriately designed interventions.

Male circumcision research in the HIV response

In terms of increasing the evidence base in the fight against HIV, a number of large research projects were conducted. Some of these research projects investigated the possibility of utilizing a MC rollout program for HIV prevention in the country given that by the time HIV was becoming a real threat in PNG, MC as a HIV intervention was being implemented in Africa and making a significant impact in the fight against HIV in those African countries (74-76, 38). These MC studies in PNG uncovered

practices that drew the world's attention to the effect of mixing of traditional and modern cultures in a country known the world over for its cultural diversity.

It was found in those MC studies that foreskin cutting and other penile practices already existed in the country (74-76). An interesting finding was that of the practice of longitudinal penile foreskin cutting, which was practically unique to PNG. It is a simple longitudinal cut (usually dorsally) to the foreskin that exposes the glans penis in much the same way as a circumferential cut of MC would, although the foreskin is not completely excised but hangs loosely on the underside (74, 75, 77).

How this practice came about was not fully understood. What was known though was that some communities in PNG had penile-cutting traditional MICs that may have influenced the penile practices seen among men today (77). It was also known that men preferring MC for health, cultural and religious reasons are unable to access this service at public health facilities – given the constraints on the health system – and are thus undergoing the simple longitudinal cut outside of health settings (71-76). About one in two men in PNG have this simple form of foreskin cut (74). HIV prevalence among men with longitudinal cut foreskin was lower compared to men with intact foreskin. This suggested that a MC roll-out program was unlikely to have as much impact on HIV prevention in PNG compared to countries in Africa where foreskin cutting was uncommon (78, 79).

Thus, rather than recommending roll-out of MC as an intervention against HIV, researchers investigating MC in PNG prioritised prevention of harm to men choosing foreskin cutting outside of health settings (76). This essentially meant increasing accessibility to safe MC or clinic-based foreskin removal. This could also have meant increasing the safety of men who are choosing foreskin cutting outside of health facilities for cultural and personal reasons. Issues with sex including the organs concerned are sensitive topics in PNG and are best dealt with at discrete locations by experts of the same sex or gender (74). It was not known, however, how the safety of these men would be increased against the backdrop of financial woes and resource constraints the country was facing and against the background of rapid traditional-to-modern cultural change.

3.7. The Traditional best practice for HIV prevention study

One of the studies sanctioned and funded through the National HIV Response gauged the views of cultural and community leaders in a typical district in PNG about what in their view was the best approach in dealing with the problem of HIV. This study – led by the author of this thesis – stemmed from the belief that a 'bottom-up' rather than 'top-down' approach could be best in the fight against

HIV in the setting in PNG. It was also thought that context-specific approaches were better than one-size-fits-all approaches (53, 80). Data from that research project were combined with newly generated data from this PhD study to assess the acceptability of the intervention under study, the results of which were published in a journal (PLoS One) article and which appears in chapter 6 of this thesis. Hence, the published article presented in chapter 6 is referenced here in chapter 3 (and earlier in chapter 1).

In that initial research project, the local people's views on the best traditional practice for HIV prevention were gauged using qualitative data generated from four focus group discussions and 16 Key- informant Interviews, and quantitative data from a cross-sectional survey conducted using convenience sampling. The findings of that study (Traditional best practice for HIV prevention study) are summarized below. Do note again that the findings presented below also appear in chapter 6 of this thesis but in the context of assessing the acceptability of re-establishing a modified version of the old manhood rites in this setting. Specifically, data collected in Phase One and Phase Two described in that acceptability assessment (presented in chapter 6), actually points to the research that was conducted in the 'Traditional best practice for HIV prevention study' conducted in 2009 and 2011.

3.7.1. Conventional methods were not going to work

The cultural and community leaders said in the 'Traditional best practice for HIV prevention study' that conventional methods were not going to work. It was reasoned that it would require more than awareness campaigns and condom distribution to quell the problem of HIV. This was because according to the leaders interviewed, the problem was in the behaviour of individuals. It was pointed out that if the behaviour of the people can be changed for the better, HIV would not be an issue. That HIV was thriving because people at the first place were not guided into the norms of the society, which in the study setting included limiting sex to marital relationships (80). That said, condom promotion and distribution were strongly discouraged in light of their preferred intervention of reviving the previously ceased MICs in the study setting.

3.7.2. Traditional male initiation ceremonies to prevent HIV

The participants in that 'Traditional best practice for HIV prevention study' also stated that the best approach to preventing HIV in the study setting was through the revival of the previously ceased traditional MICs (80). It was reasoned that this traditional practice guided the men and conditioned their attitudes towards the accepted norms of the society and its inexistence is now showing in the

troublesome behaviours of male youths, the declining of well-being of communities and the problem of HIV (80). The cultural leaders said that MICs were ceased some five decades ago by colonial administrators and early Christian missionaries because some activities of the rites were not in harmony with western worldviews and Christian beliefs (80).

3.8. Why the male initiation ceremonies were ceased

Therefore, what were the MICs in Yangoru-Saussia and why were they ceased? It is not known how people in Yangoru-Saussia started the MICs. What is known though is that, it is not an isolated activity, that many other cultures around the world and in PNG also initiate their young men into manhood. It is also known that the penile-cutting initiation of men is common throughout the East Sepik Province, although there are noticeable differences between communities in the way these rites are conducted (82-84).

What outsiders found when they arrived in the study area was a group of people whose livelihood centred around the initiation ceremonies (both male and female) that the local people called 'Hwelembo' (85). Food gardens, animals (mostly pigs) and traditional attires were prepared to coincide with those ceremonies where there would be feasts, dancing and exchange of goods between customary groups in celebration of the initiates who would now be recognized as men and women (82). The 'Hwelembo' prepared the young men and women for their adult life and it was also during this time that customary marriages were arranged and everyone in the communities would know who was marrying who (80). Marriage was not a secret matter, although sex was.

The outsiders also found that the people in this setting employed some repulsive methods of preparing the young men and women for adult life (81-83). Among the most repulsive was the penile-cutting ritual of the male ceremonies which involved shoving barbed vines into the penile urethra in a 'bottle brushing' fashion or of splitting the penile head using pointed objects such as cassowary bones (80, 83). In addition, the pioneer Christian missionaries found to their dismay that the rites included spiritual activities (that they labelled 'witchcraft' and 'black-magic') which were in direct conflict with Christian beliefs (81, 86, 87). Thus, the once glamorous Hwelembo ceremonies were discouraged and eventually banned by the colonial administrators.

The banning of the rites effectively eliminated a local peoples' way of life. It also distorted their structure in relationships and caused blurring of the values that give them meaning in life. The outsiders had other, perhaps, better ideas and concepts. The churches came, schools were established,

administrative centres and police posts were built, clinics were put in place, and the local people were served and their needs met through the new system. In other words, the value in local people taking ownership over all manner of things in their own lives was effectively eliminated. This was essentially the beginning of dependence and expectations for free-handouts for people in the study setting, which is similar to the political failings in PNG as described by Sir Anthony Siaguru in his book titled 'The Great Game in PNG' (88).

The banning of the rites also removed the traditional means of guiding the young men in the study setting into manhood. This meant that most of the men transitioning into adulthood were not imbued with the traditional values and principles required for individual and community well-being. In other words, the control on the behaviour of male youths that the MICs had in this setting was no longer there. Thus, a rise in criminal activities, violence and indecent behaviours among the male youths became apparent and has become commonplace in local communities presently in Yangoru-Saussia (88, 89).

3.9. Substituting traditional penile-cutting operations with medical male circumcision within male initiation ceremonies for HIV prevention in East Sepik Province

Taking in the suggestion of the cultural and community leaders in Yangoru-Saussia and combining that with research findings about the protective effect of MC on HIV, the East Sepik Provincial AIDS Committee (ESPAC) introduced a modified form of the old MICs in some communities in East Sepik Province (54). The main modifications included the substitution of traditional penile-cutting ritual with health-worker-administered MC and exclusion of 'black-magic' and other unwanted practices (54).

There were many questions though especially regarding changes made to tradition. It was important for instance to establish whether local people would themselves be willing to revisit a practice that they have lived without for many decades. If they were willing, would they accept the suggested change in tradition from traditional penile-cutting to MMC? Bio-medically, it was crucial to assess whether it was feasible to provide a medical procedure safely in a traditional initiation seclusion. In terms of organization and logistics, it was paramount to establish whether it was practically feasible to gather all the resources required to stage this program in the communities. At the end of it all, it was vital to determine whether the new MICs had had any impact especially on the well-being of individual

initiates and their communities. This research was therefore conducted to answer these questions regarding the acceptability and feasibility of integrating MMC within traditional MICs in Yangoru-Saussia, PNG.

3.10. The research question

Is it acceptable and feasible to integrate MMC within MICs in Yangoru-Saussia, PNG?

3.11. The research aims

1. To assess the cultural acceptability of integrating MMC within MICs for HIV prevention in Yangoru-Saussia, PNG.
2. To assess the practical feasibility of integrating MMC within MICs for HIV prevention in Yangoru-Saussia, PNG
3. To assess the short-term impact of a MMC-integrated MICs on communities in Yangoru-Saussia, PNG.
4. To investigate the association between MC and sexual risk behaviours among men in PNG.*

*It should be noted that due to paucity of information on the sexual practice of men in PNG and the uncertainty surrounding a counter increase in sexual risk behaviour following MC, this research project had an additional undertaking (research aim 4 and objective 5) to examine existing data from the large ‘Acceptability of male circumcision in PNG study (19).

3.12. Research objectives

1. To gauge the views of cultural leaders regarding the integration of MMC within MICs in Yangoru-Saussia in East Sepik Province, PNG.
2. To assess the views of members of the general community regarding the integration of MMC within MICs in Yangoru-Saussia in East Sepik Province, PNG.
3. To assess the operational feasibility of integrating MMC within MICs in Yangoru-Saussia in East Sepik Province, PNG. Operational feasibility assessment includes access to the site, localities necessary (beds, lighting, insect screening, and sterilization tools), ‘time taken per procedure’ and the rate and type of complications.

4. To gauge community leaders' views about the short-term impact of the MMC-integrated' MICs in Yangoru-Saussia in East Sepik Province, PNG.
5. To identify and compare risky sexual practices (including sex with multiple partners and unprotected sex) between cut (circumcised) and un-cut (non-circumcised) men in PNG. This objective was to inform the researchers on whether it was safe to proceed with the intervention, given that it would be unethical to do so if foreskin cutting would lead to increase in sexual risk behaviours. Thus, this objective was addressed upfront in Part One of this PhD study.

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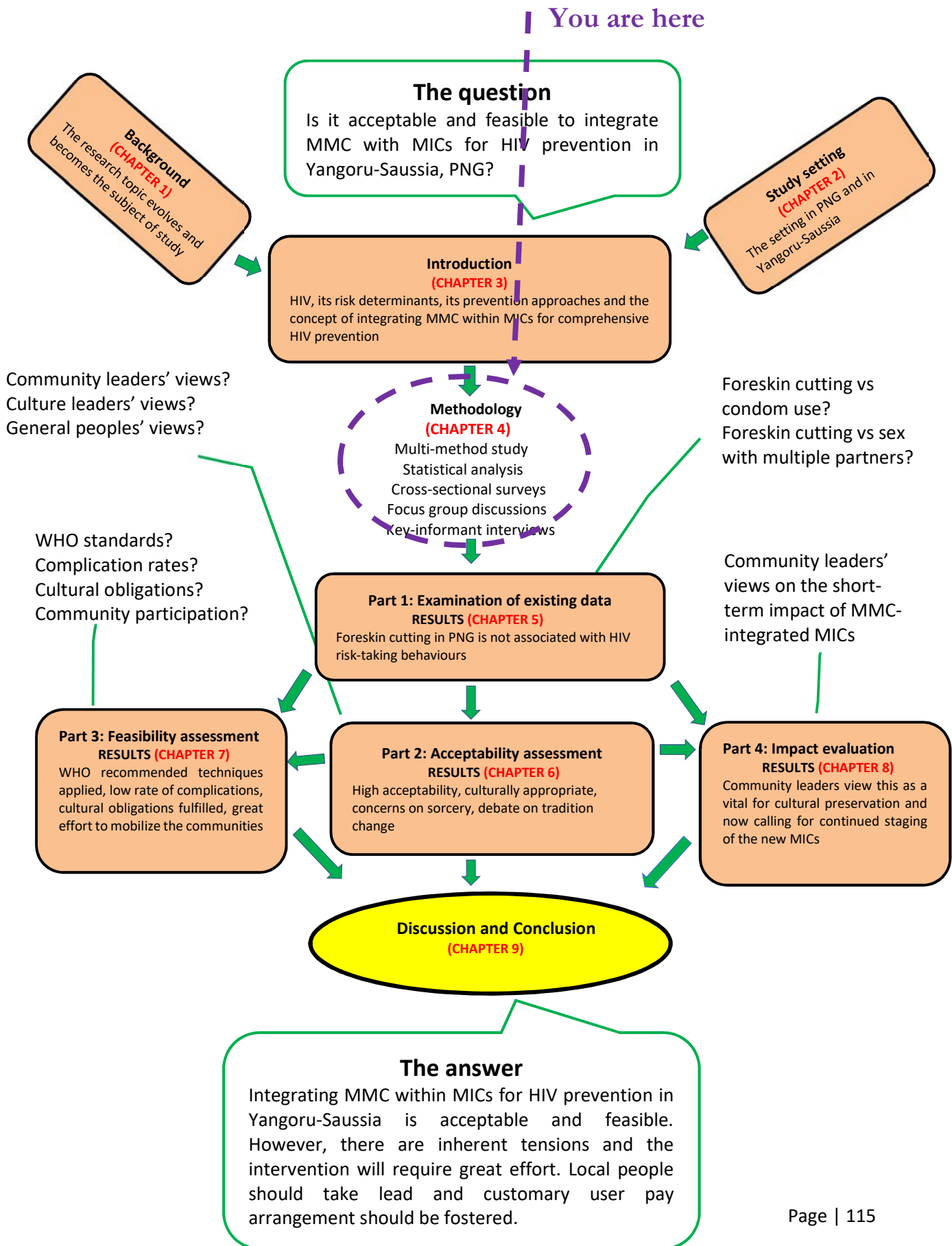
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Main points

- This chapter provided the rationale for the study undertaken.
- Rapid change from traditional to modern and the breakdown of traditional social structures is contributing to fueling the spread of HIV in PNG.
- HIV response in PNG was impeded by many factors including resource constraints and the inability to reach majority of the people in rural areas with HIV information.
- HIV response needed to be context-specific.
- Reviving previously ceased traditional MICs and including MMC was considered as a context-specific HIV intervention in Yangoru-Saussia district.
- It was not known, however, if it was acceptable and feasible to integrate MMC and revive the old MICs in Yangoru-Saussia.



4. Methodology

Summary

The previous chapter (3) was the introduction where the rationale and significance of the study were provided. It described the HIV challenge in PNG and introduced the idea of integrating MMC within MICs for a context-specific and comprehensive approach to HIV prevention in Yangoru-Saussia, PNG. In this chapter, I will outline the research method applied in this study. I will begin by providing the rationale behind the use of a multi-method research strategy. This will be followed by descriptions of the research design, data collection and data analysis.

4.1. Research methodology

A multi-method research strategy was applied in this study. A multi-method strategy denotes pragmatism approach in the creation of knowledge. In pragmatism, the researcher acknowledges that there are multiple realities or ways of understanding a phenomenon or that no single viewpoint can provide a complete explanation of why things happen the way they do (1-3). In this study, it was recognized that the research question (which is often the deciding factor in choosing pragmatism approach) was unlikely to be adequately answered using purely deductive (post-positivism) or inductive (constructivism) approaches. Thus, a pragmatic multi-method approach was chosen and applied.

4.2. The research design

Research design refers to a set of steps or framework used in gathering the information required to answer a research question (1). In other words, a research design shows how the different components of a study are link in answering a research question. Research designs are vital for reproducibility of study results, without which the credibility of the results obtained in a study could be brought into question (4). Figure V shows the design used in this study. The research question (Is it acceptable and feasible to integrate MMC within MICs for HIV prevention in Yangoru-Saussia, PNG?) needed investigation from four sequential angles or perspectives: risk of harm (to initiates) perspective at the outset; cultural acceptability perspective following that; practical feasibility perspective next; and impact perspective at the end. Risk of harm assessment through ‘examination of existing data’ came

first in the sequence so that the information generated could inform the later parts of the study. This was because there was paucity of information surrounding sexual practices of young people in PNG, especially the young men going through foreskin cutting.

4.2.1. Perspective 1: Risk assessment (Study Part One: Examination of existing data)

Perspective 1 investigated risk of harm to initiates. This was a statistical analysis that in essence was a filling-in of a gap in vital knowledge before the study could proceed to perspectives 2, 3 and 4 or Study Parts Two, Three and Four. From this angle of viewing the research question, it was crucial to ascertain that the young men going through initiation and foreskin cutting would not be increasing their risk of HIV infection from sexual risk behaviours, particularly unprotected sex and sex with multiple partners. In addition, Perspective 1 was vital because it was not known if questions about sexuality and foreskin cutting (that would come in Parts Two and Three of the study) were appropriate for young initiates of the new cultural program. Quantitative information sought in Perspective 1 therefore included frequencies for 'condom use or non-use at last sex', 'number of female sexual partners', 'age at sexual debut', 'practice of anal sex' and the 'status of the foreskin' (cut or no cut).

Data collection forms were not needed in this part of the study since it involved existing data from a Australian National Health and Medical Research Council (NHMRC) study in which the researcher (CM) was a key member of that research team (5).

4.2.2. Perspective 2: Cultural acceptability assessment (Study Part Two: focus group discussions, key-informant interviews and cross-sectional surveys)

Perspective 2 or Part Two of the study assessed the research question in relation to the cultural acceptability of the said intervention. This perspective of the study required views from the local people and owners of the tradition under study to be gauged, analysed and interpreted. Peoples' views are tied to their unique experiences and the stories they have. Thus, apart from a quantitative cross-sectional survey to determine the general opinion about the proposed intervention, this angle of the study included focus group discussions and key-informant interviews allowing community leaders and cultural leaders to tell their stories in relation to the question of cultural acceptability surrounding the proposed intervention.

4.2.3. Perspective 3: Practical feasibility assessment (Study Part Three: observational descriptive study)

Perspective 3 or Part Three of the study assessed the research question in relation to whether the new intervention was practically feasible. This angle essentially examined the research question in terms of the standards of health practice, the bio-medical risks or complications of surgery and organizational challenges, including cost of providing this medical service within initiation rituals. This was where an observational descriptive study was conducted during a trial of the proposed intervention.

4.2.4. Perspective 4: Short-term impact assessment (Study Part Four: key-informant interviews)

Perspective 4 or Part Four of the study assessed the research question in relation to the short-term impact of the new program. This angle of assessment examined the effect of the new MICs in the communities through qualitative interviews. This part of the study was important because the level of usefulness affects feasibility of interventions. High level of usefulness means high acceptability and increased feasibility whereas the reverse is likely if usefulness is low. Likewise, negative impacts – as opposed to positive impacts – are expected to decrease the acceptability of the intervention.

4.3. Risk assessment (Study Part One)

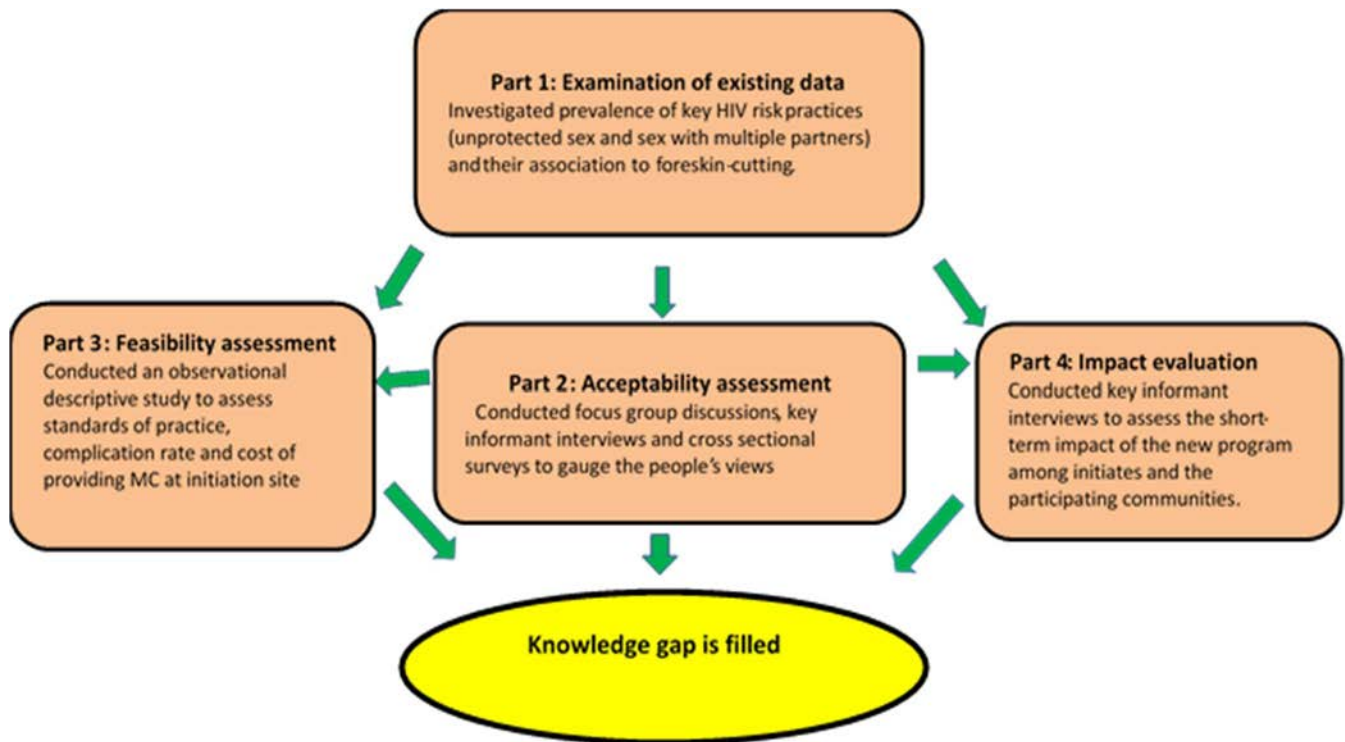
The ensuing paragraphs provide the main details of Part One of the study where potential risk of harm of HIV infection for men undergoing initiation was assessed. In this part of the study, data from another study titled ‘Acceptability of male circumcision in PNG study’ was examined statistically. The main parts of that study including data collection, data management, data analysis and ethical considerations are summarised below. More information on that study can be accessed from <https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-13-818>.

4.3.1. Data collection

The researcher (CM) was a key member of the team in the large multi-site study that investigated foreskin cutting in PNG (5). Thus, it was permissible for him to use the data generated in that study. To get data representative of the country, data collection in that study in 2010 involved four sites; two church run universities (Pacific Adventist University in the Southern region and Divine Word University in the Momase region), an Oil Palm Plantation in the Southern region and a Mine Site in

the Highlands region. Convenience sampling was applied to recruit the participants into the study. It was noted, however, that men from all over the country congregated at the study sites for employment and for education so that the data collected was representative of adult men in PNG (5).

Figure V. Diagrammatic representation of the research design



Students at the universities self-administered the survey questionnaires (5). Most study participants at the plantation and mine sites filled the survey questionnaires assisted by researchers because of literacy difficulties, while those who were able to read and write self-administered. The questionnaire sought information including the participants’ demographics, their level of knowledge of HIV, their circumcision status and their sexual practice such as age at sexual debut, sex with multiple partners and condom use at last sex.

4.3.2. Data management

Data from the filled questionnaires from each of the four study sites were double entered onto site-specific Microsoft Excel files and later combined into a single data file. Copies of these files were stored on multiple data storing devices. The data files were also saved onto the JCU electronic data storing system. The ‘sort and filter’ function on Microsoft Excel was used to clean the quantitative

data including identifying missing or incorrect values and making corrections where appropriate, prior to conducting the actual analysis.

4.3.3. Data analysis

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 22. Frequencies were computed for categorical variables including the variables of interest in this part of the study 'condom use at last sex', 'sex with multiple partners' and 'foreskin cutting status'. Medians and interquartile ranges were computed for numerical variables such as 'age' and 'number of sex partners'. classical chi-square tests were applied to test for association between categorical variables. Bivariate and multivariate logistic regression tests were conducted to determine the effect of foreskin cutting on sexual risk-taking behaviours. P value of <0.05 for the association tests (chi-square and logistic regressions) were taken as significant at 95% confidence interval (6, 7).

4.4. Acceptability assessment (Study Part Two)

This part of the study includes data from the 'Traditional best practice for HIV prevention study' conducted in 2009 and 2011. Including data from that other study (which CM was the lead investigator), the acceptability assessment had three phases as shown in Table C. The current study is titled 'Integrating MMC within MICs study'.

4.4.1. Data collection

Phases One and Two (Traditional best practice for HIV prevention study)

Data collection in the earlier 'Traditional best practice for HIV prevention study', which contributes data to Phase One and Two of this current study, occurred in 22-31 December 2009. The data collection tools, sampling and recruitment of participants, the administration of survey questionnaires and the actual conduct of the interviews are described in the paragraphs that follow.

Data collection forms

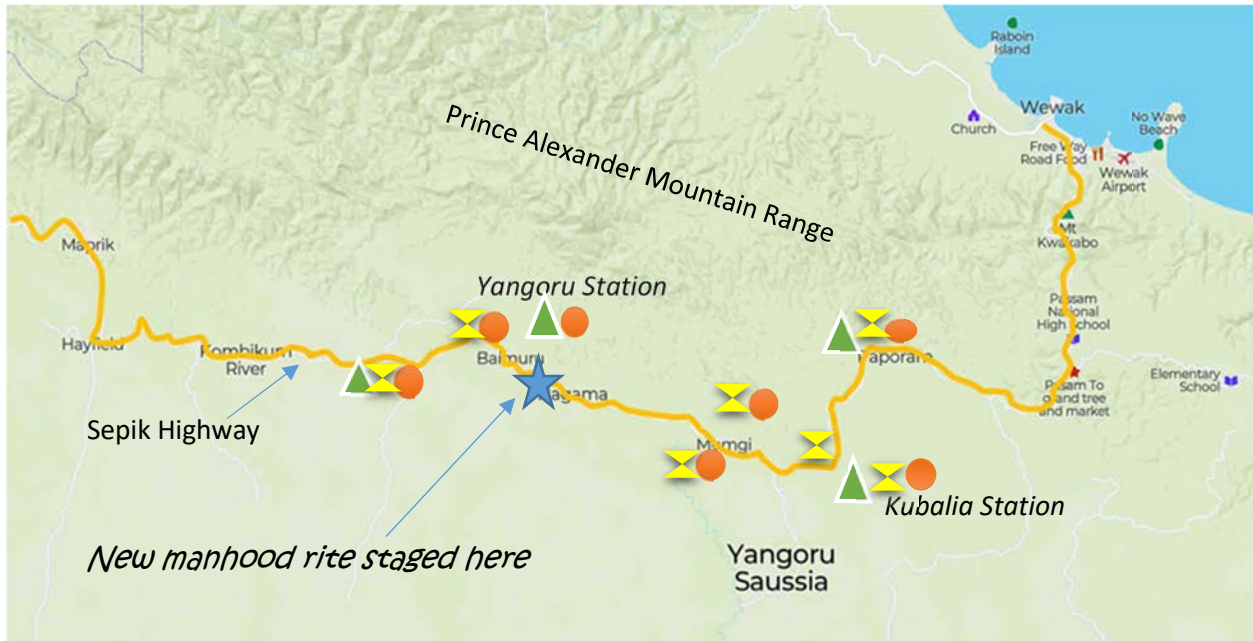
Specifically designed data collection forms were applied in Phases One and Phase Two of the acceptability assessment. The guide used to conduct the focus group discussions in Phase One of this study had open-ended questions about male youth behaviour and the MICs of the past. The questions were designed to have the study participations describe the effect of the MICs in relation to individual and community well-being. For example 'Can you please describe some of the cultural practices

especially to do with initiation in your area?’ and ‘What was the purpose of those cultural practices?’ (See Appendix VIII).

Table C. The three phases of the acceptability assessment

Phases	Study participants and data collection sites
HIV prevention study Traditional best practice for Phase one	Focus group discussions Four focus group discussions were conducted in 2009: one group per each of the four LLG in the district. The participants (10 per LLG, Total=40) were men respected in the communities as elders and these include cultural leaders, ward councillors and clan leaders. The discussions were conducted at or near the Council Chambers of each LLG divisions. The main aim of Phase One was to gauge the views of community leaders on the most appropriate local or traditional approach to HIV prevention in Yangoru-Saussia district.
HIV prevention study Traditional best practice for Phase two	Key-informant interviews and one cross-sectional survey 16 key-informant interviews and one cross-sectional survey were conducted in 2011. The participants of key-informant interviews were men (n=10) and women (n=6) recognized as leaders of local traditional practices in the communities. Participants of the survey (n=200) were adults (mostly villagers) found along roadside villages, markets, schools and health clinics during the survey period. The main aim of Phase Two was to investigate the local people’s views on reviving MICs for HIV prevention.
Integrating MMC within MICs study Phase three	Key-informant interviews and one cross-sectional survey 10 key-informant interviews and one cross-sectional survey were conducted in 2015. The participants of key-informant interviews were men (n=6) and women (n=4) recognized as cultural leaders in their respective communities. Participants of the survey (n=64) were men and women (mostly villagers) recruited into the study at villages, markets, schools and clinics along the main Sepik Highway. The main aim of Phase Three was to assess the acceptability of replacing traditional penile bleeding with MMC at future MICs in Yangoru-Saussia.

Figure VI. Map of Yangoru-Saussia showing the acceptability assessment data collection areas.



Phase one (focus group discussions) ▲ Phase two (key-informant interviews and cross-sectional survey) ⌘ Phase Three (key-informant interviews and cross-sectional survey) ●

The guide used to conduct the key-informant interviews in Phase Two of the study had similar open-ended questions to that of the focus group discussion guide. The questions aimed to draw as much information as possible from the respondents about the initiation ceremonies of the past, including why these ceremonies were staged, what activities transpired during those rites, how the initiates were changed (from boy to men) and why these initiation ceremonies have ceased. A crucial open-ended question asked in the key-informant interviews was ‘Can you please tell us about the male initiation ceremonies in your area?’ (See Appendix VIII).

The cross-sectional survey form in Phase Two was similar to the survey form applied in the present study (Integrating MMC within MICs study). There were three sections: section one had questions on demographic details including gender, age, education level and religion; section two had questions to assess HIV knowledge; and section three had questions on the knowledge of traditional initiation ceremonies and the possibility of reviving those practices. A key question in section three of that questionnaire asked about whether study participants would be happy to see the traditional MICs revived (See Appendix VIII).

Sampling and participant recruitment

Sampling in Phase One and Phase Two was similar to that of the current project. Purposive sampling was applied and 40 participants for focus group discussions (10 participants per discussion) and 16 respondents (10 male and 6 female) for key-informant interviews recruited. Local contact persons in the communities identified key leaders in the communities and invited them to the research meetings at designated locations in the district.

Convenience sampling was applied in the cross-sectional survey in Phase Two where 200 participants (100 male and 100 female) completed the survey forms. The researcher and research-assistants travelled in a hired vehicle along the Sepik Highway to roadside markets, health clinics and schools and where people gathered, a public announcement about the study was given and those that came forward to give their views were interviewed.

Conducting the focus group discussions, key-informant interviews and cross-sectional survey.

At the venue of the focus group discussions (Phase One), the participants completed consent procedures prior to the meeting. The discussions began with introductions and setting of ground rules. Trained moderators used the specifically designed discussion guide and facilitated the discussions. The discussions were voice recorded and a trained scribe kept written record of the views expressed. The recordings were transcribed verbatim and translated where appropriate.

Participants of key-informant interviews (Phase Two) also went through consent procedures prior to the interviews. The key-informant interview form described above was used to ask the cultural leaders about the initiation ceremonies in Yangoru-Saussia. The interviews were voice recorded, transcribed word-by-word and translated from non-English expressions to English where necessary.

The cross-sectional survey forms (Phase Two) were administered at roadside markets along the Sepik Highway, outside health facilities and at LLG Council Chambers (See Figure VI). Where the questionnaires were self-administered, the respondents filled in the questionnaires and returned the filled forms to the researchers. Where the questionnaires were administered with assistance from

researchers, the researchers interviewed the respondents using the questionnaire and the responses provided by the study participants were written in the spaces provided in the questionnaire.

Phase Three (Integrating MMC within MICs study)

Data collection for Phase Three of the acceptability assessment occurred between May and August 2015 in the current study (Integrating MMC within MICS study). Survey questionnaires were administered and cultural leaders interviewed. The data collection forms used in that phase of the study, sampling and recruitment of study participants, and how exactly the interviews were conducted are described below. Ethics aspect of this part of the study are described under the ‘ethical considerations’ section of the overall study towards the end of this chapter.

The data collection forms

The interview form for key-informant interviews (see Appendix IX) had one main open-ended question ‘What do you think about the MICs in Yangoru-Saussia and new things that are coming in such as health workers being involved?’ The form also had a number of prompt questions to guide the flow of the conversation during the interview. Some of these questions were ‘Would you be happy with the involvement of health workers at MICs?’, ‘If physical pain must be felt by the initiates, how much physical pain is required?’, ‘Can physical pain be substituted with another activity?’ and ‘If blood must be shed by the initiates, how much blood loss is required?’

The survey instrument had three sections comprising closed-ended and open-ended questions (see Appendix VIII). Section one sought demographic information including gender, age, marital status, church denomination, level of education and status of initiation. These demographic characteristics were important since they were likely to have an influence on the type of responses provided to questions about initiation and the possibility of integrating MMC and maintaining the once renowned tradition in the modern age in Yangoru-Saussia. Section two of the questionnaire prompted for information on HIV knowledge. Simple closed-ended HIV knowledge questions were asked, for instance, ‘Can a woman get HIV from having sex with a man who has HIV?’ It was of interest to see if participants in this study actually knew what HIV was and how they could relate the proposed idea of integrating MMC within MICs for HIV prevention. Section three of the survey instrument had questions about the proposed modification to MICs. Three key questions asked in that section were “Do you think MICs can enable young men to become responsible adults?”, ‘Would you agree for

health workers to provide MMC at MICs in Yangoru-Saussia?’ and ‘Would you like the MICs in Yangoru-Saussia to be revived?’

Sampling and participant recruitment

Purposive sampling was used to recruit prominent cultural leaders for the key-informant Interviews. Local contact persons in discussion with the study team, scheduled appointments with recognized cultural leaders and the study team met with these leaders on the appointed date, time and venue. These interviews also took place on the same week as the cross-sectional survey.

Convenience sampling was applied in the cross-sectional survey. Similar to the cross-sectional survey in Phase Two, the researcher and research assistants travelled in a hired vehicle along the Sepik Highway to roadside markets, health clinics and schools and where people gathered, a public announcement about the study was given. Those that came forward to give their views on the topic of integrating MMC within MICS were interviewed. Challenges mainly in logistics and time warranted the use of this non-probability sampling method over random sampling method to determine the prevalence of views regarding the intervention (MMC-integrated MICs for HIV prevention) in Yangoru-Saussia. In addition, convenience sampling was more appropriate given that those missing the selection (if random sampling was applied) and feeling inadequate, may cause disruptions to the collection of the study data.

Conducting the key-informant interviews

The key-informant interviews occurred at Belmore village, Yangoru Station, Rhulimbo Village, Baimuru village and Munji Village along the main Sepik Highway (see Figure VI). The male cultural leaders had the full content of the participant information sheet read (in Tok-Pisin) and explained to them (by the author) and the interviews proceeded after consent forms were signed. All interviews were recorded using a voice recorder. The recorded files were copied to the author’s laptop and transcribed verbatim. Translation from Tok-Pisin or local dialect to English was done where appropriate.

Key-informant interviews with prominent female cultural leaders were deferred. From talking to people during the data collection, it became obvious that women had very little say in subjects concerning MICs and clarification was needed on whether interviewing female cultural leaders on a ‘male only affair’ was necessary. To cater for the shortfall in the amount of data for the acceptability

assessment, this study included data collected from a similar study conducted in 2009 titled ‘Traditional best practice for HIV prevention study’, details of which were provided in chapters 1 and 3 of this thesis, and which would also be provided in chapter 6.

Conducting the survey

The author (CM) administered the questionnaires to male participants and trained research assistants administered the questionnaires to female participants. The first point of data collection was at Boem-Sara Market along the Sepik Highway (see map of Yangoru-Saussia). A general announcement was made about our purpose and people came forward and were interviewed. Male interviews (by the author) happened some distance away from where the female interviews were conducted. Information from the participant information sheet were explained to participants and written consents were obtained prior to interviews. Literate persons self-administered the forms after signing their consent to participate.

Similar approach was applied at two other markets (Baimuru and Munji Markets) along the Sepik Highway. Participants were also interviewed at Sassoya Health Centre, Naksimingal Sub-Health Centre, Sause LLG Council Chambers (at Kubalia Station) and Numbo LLG Council Chambers. A total of 65 questionnaires were filled and placed in clearly labelled folders. Data cleaning and entry into Microsoft Excel took place at the end of the survey.

4.4.2 Data management

Phases One and Two (Traditional best practice for HIV prevention study)

The audio files and word documents containing transcripts from the four focus groups and 16 Key-informant interviews were saved to a folder titled ‘Qualitative data’ and saved on multiple password-protected data storing devices. The Microsoft Excel data file from the cross-sectional survey in Phase Two was saved in another folder titled ‘Quantitative data’, alongside the ‘Qualitative data’ folder on the same password-protected data storing devices. The ‘sort and filter’ function was used to check and clean the quantitative data ready for analysis. The hard copies of the data were kept in clearly labelled folders and stored away in a specifically labelled box in the researcher’s office.

Phase Three (Integrating MMC within MICs study)

The audio files from the key-informant interviews in this phase of the study were appropriately named and saved onto the same data storing devices alongside the data files from Phase One and Phase Two.

The interviews were transcribed verbatim and the transcripts checked for consistency with the audio recording. Data from the cross-sectional survey in this phase of the study were double entered onto a Microsoft Excel file soon after the data collection trip in 2015. The sort and filter function was used to check and clean the data in preparation for analysis. The hard copies or filled survey questionnaires were kept in clearly labelled folders and locked away in a cabinet accessible only to the lead investigator (CM).

The data files in all three phases of the study were also uploaded to the JCU's 'The Cloud' electronic data storing system. In addition, the individual files were uploaded to the researcher's password-protected Google drive for safekeeping.

4.4.3. Data analysis

The quantitative data files from Phase Two and Phase Three of this acceptability study were imported to the Statistical Package for Social Science (SPSS) version 22 for analysis. The files were analysed separately. Frequencies were computed for categorical variables including the variables relating to the question of whether or not the MICs in Yangoru-Saussia should be revived and whether MMC should be integrated within MICs. Median and interquartile range were computed for the numerical variable 'age' for both data files. Classical chi-square and non-parametric Kruskal-Wallis tests were conducted to test for association between categorical-categorical and categorical-numerical variables respectively. An alpha error of 0.05 with 95% confidence interval was taken as significant (6, 7).

The qualitative data from all three phases of this acceptability study were combined and analysed manually using thematic analysis. There were total of 60 pages of transcribed data. The data was read multiple times and main themes emerging from the data were identified and assigned colour codes. The data was read again and theme-respective colour codes applied on the texts. These color-coded texts were separated and placed under their respective themes. Inductive and deductive reasoning were then applied to link the coded data and themes into a cohesive storyline (8, 9).

4.5. Practical feasibility assessment (Study Part Three)

This part of the study assessed the practical feasibility of the intervention (Integrating MMC within MICs). A two-part observational descriptive study was conducted. The paragraphs below provide details of data collection, data management and data analysis for Part Three of this study.

4.5.1. Data collection

This part of data collection occurred from 23 November to 23 December 2015 while a test-run modified initiation ceremony was staged and initiates were going through the MMC operation within the ceremonial grounds.

Data collection forms

Data used in this part of the study were generated using two specifically designed questionnaires (Form 1 and Form 2) (See Appendix IX). The questions in these data collection forms were derived using information presented in the ‘WHO tool-kit for male circumcision under local anaesthesia’ (10). In addition, Form 2 had questions that reflected the findings in earlier MC studies, which showed among other findings that there were extensive penile practices in PNG (5, 11-13).

Form 1 of the study (Appendix IX) had three sections. Section one prompted the researcher to describe the setting of the medical operation. It also requested information on the general processes of circumcision, wound care and sterilization of instruments. General process of circumcision refers to the flow or order of operation employed in circumcising the initiates. Section two required the researcher to document the information dispensed to initiates at the HIV counselling sessions and at traditional counselling. Section three of the form sought expenditure information including the cost of medical supplies and the amount of money expended in hiring health personnel for the medical operation.

Form 2 of this descriptive study (Appendix IX) had three sections: section one prompted for information on client preparation and included ‘state of foreskin (cut/uncut); section two requested for MC procedural information such as techniques applied and time-taken per client; and section three prompted for information on complications encountered and how these complications were managed.

Conducting the descriptive study

Form 1, sections one and three were filled by the researcher at the end of the medical operation and following the repatriation of the medical personnel to their respective health facilities in the Province. Leaving these sections to the end of the operation allowed all required details to be captured, especially details of costs involved. Section two of Form 1 was filled during the HIV counselling sessions

conducted prior to surgery and during the dawn traditional counselling episodes provided to initiates by elders within the ceremonial seclusion.

Form 2, sections one and two were filled during the MMC operations. The operators (CM and an experienced community health worker) recorded the details of the clients in section one prior to operating on the clients. Immediately after a surgical procedure, the operators ungloved and filled section two with details of the individual operation processes. Section three of Form 2 was filled by CM at the end of the initiation ceremony – some three weeks after the MMC operation – giving ample time for all possible post-surgical complications to be included in the form and thus, the study. Total of 45 forms were filled.

4.5.2. Data management

The collected data were entered onto a Microsoft Excel file soon after the staging of the male rite. The data was cleaned using the ‘sort and filter’ function ready for descriptive statistical analysis. Multiple copies of this data file were made and stored in a folder titled ‘Practical Feasibility Assessment’. This folder was saved alongside the ‘Acceptability Assessment’ data folder in the researcher’s password-protected data storing devices. Data in this aspect of the study were saved to a folder titled ‘Practical Feasibility’ while the ‘Qualitative data’ and ‘Quantitative data’ folders of the acceptability assessment were moved to a folder titled ‘Cultural Acceptability’. The hard copies of the data collected in the practical feasibility assessment in 2015 were kept in clearly labelled folders and eventually locked away in a cabinet accessible only to the researcher (CM) at James Cook University, Cairns campus.

4.5.3. Data analysis

Thematic analysis was applied in analysing the data generated from the practical feasibility assessment or Part Three of the overall study. The descriptions of the operation surroundings and the processes of circumcision and sterilization of instruments were read multiple times and main themes identified and color-coding assigned. The descriptions were read again and theme-specific color-coding applied to the phrases, words, sentences or paragraphs depending on their meaning. The color-coded texts were separated and placed under their respective themes and a cohesive storyline weaved using inductive and deductive thought processes (8, 9).

Descriptive statistics was applied to the numerical data collected from the medical operation and from mobilization of recourses (for the medical operation). Frequencies were computed (using the 'sort and filter' function on Microsoft Excel) for categorical variables such as 'circumcision technique applied' and 'type of complications'. 'Mean' and 'standard deviations' were calculated (using the 'mean' and 'Stdev' functions) for numerical variables such as 'time per circumcision'. The total cost of mobilizing the resources for the medical operation was divided by the number of MMC procedures performed to get the cost per each circumcision procedure.

4.6. Short-term impact evaluation (Study Part Four)

The impact of the new manhood rite was investigated. Details of the data collection, management and analysis for this part of the study are summarized below.

4.6.1. Data collection

Data collection forms

The Key-informant interview form for this part of the study had one main open-ended question that asked about the participants' views regarding the modified male initiation ceremonies staged in their community in 2015. Following that main question were prompting questions such as 'What were some positive things that have happened as a result of the new cultural program?' and 'What were some negative things that have transpired as a result of the new initiation ceremonies?' (See Appendix X)

Sampling and participant recruitment

Purposive sampling was employed and community leaders identified with assistance from local contact persons and interview appointments including date, time and venue of meeting were made. The researcher then travelled (using a hired vehicle) and met the community leaders as per their appointments and conducted the interviews. Participants in this aspect of the study (impact assessment) were male (5) and female (2) leaders in villages that participated in the new male initiation program. The researcher interviewed both male and female participants because the subject of interview and the questions asked were not sensitive. The interview was about how the new program affected the well-being of individual initiates and their communities, which had little or no link to gender sensitive issues such as sex.

Conducting the interviews

The interviews were conducted by the researcher using the ‘Community Leader Interview Form’ for Study Part Four (Appendix X). Following consent procedures, the researcher asked the main question in the interview form and allowed the participants to give their opinions on what they observed in the initiatives and in their communities following the staging of the new MICs. The interviews were voice recorded and the recordings transcribed verbatim. Expressions made in the local lingua franca and native language were translated to English prior to analysis.

4.6.2. Data management

Multiple copies of the audio data files were made and stored on the data storing devices (mentioned earlier) alongside the data from Study Parts Two and Three. These audio files were saved to a folder titled ‘Impact Evaluation’. The recorded interviews were transcribed verbatim and these transcribed data files were also stored in the ‘Impact Evaluation’ folder next to the audio files. These audio and transcribed data files along with all data files from the other component of the overall study were uploaded to the JCU electronic data storing system.

The research notes kept by the researcher and other documents including signed consent forms in this part of the study were placed in appropriately labelled folders and kept in the researcher’s locked cabinet at James Cook University, Cairns campus.

4.6.3. Data analysis

Thematic data analysis was applied using the approach described earlier in Parts Two and Three of this study. The transcribed data was read multiple times and main themes identified and listed in a table. Theme-respective colour coding was applied and the data grouped under their respective themes. Inductive and deductive thought processes were then applied to weave a cohesive story from the coded texts.

4.7. Ethical considerations

Ethical clearance for this study (Integrating MMC within MICs study) was granted by the PNG Medical Research Advisory Committee grant number MRAC 14.33 and James Cook University Research Ethics Committee grant number H6006. Ethical clearance for the previous study (Traditional best practice for HIV prevention study) that contributed data to the current study was granted by the PNG National AIDS Council Research Advisory Committee grant number RES10026 and Divine Word University email approval dated November 10 2009 (Appendix XI).

In addition, participant recruitment followed guidelines endorsed in the ethics application. Participants in the focus group discussions and key-informant interviews were approached in a casual and culturally appropriate manner. Participant information sheet (Appendix VIII and IX) which contained information on the purpose and method of study and ethical obligation of the study to participants, was provided to each participant. Participants who were unable to read had the information read and explained to them. It was made known to participants that their responses were to be kept confidential and that they were free to withdraw their participation at any time thereafter and that there would not be any consequences to them (participants) if they were to withdraw their participation.

Participants' anonymity was maintained throughout this study. No information in the data can be linked to individual study participants. In addition, the research information disseminated at conference presentations and scientific publications had no way of drawing links to individual participants or village groups. Further, all sensitive issues encountered in the course of the study, such as political rivalry, were kept strictly confidential as per the signed declarations in the study consent forms.

Study Part Three (practical feasibility assessment) was a descriptive study that did not require consent procedures. In terms of the MC procedure, however, the clients provided signed consent before they underwent the operation. The filling in of the data collection forms did not require any input from the clients. The operators wrote the details of the operations, including the status of the clients' foreskin, (cut or no cut) as a way of keeping record that was consistent with standard health practice in PNG.

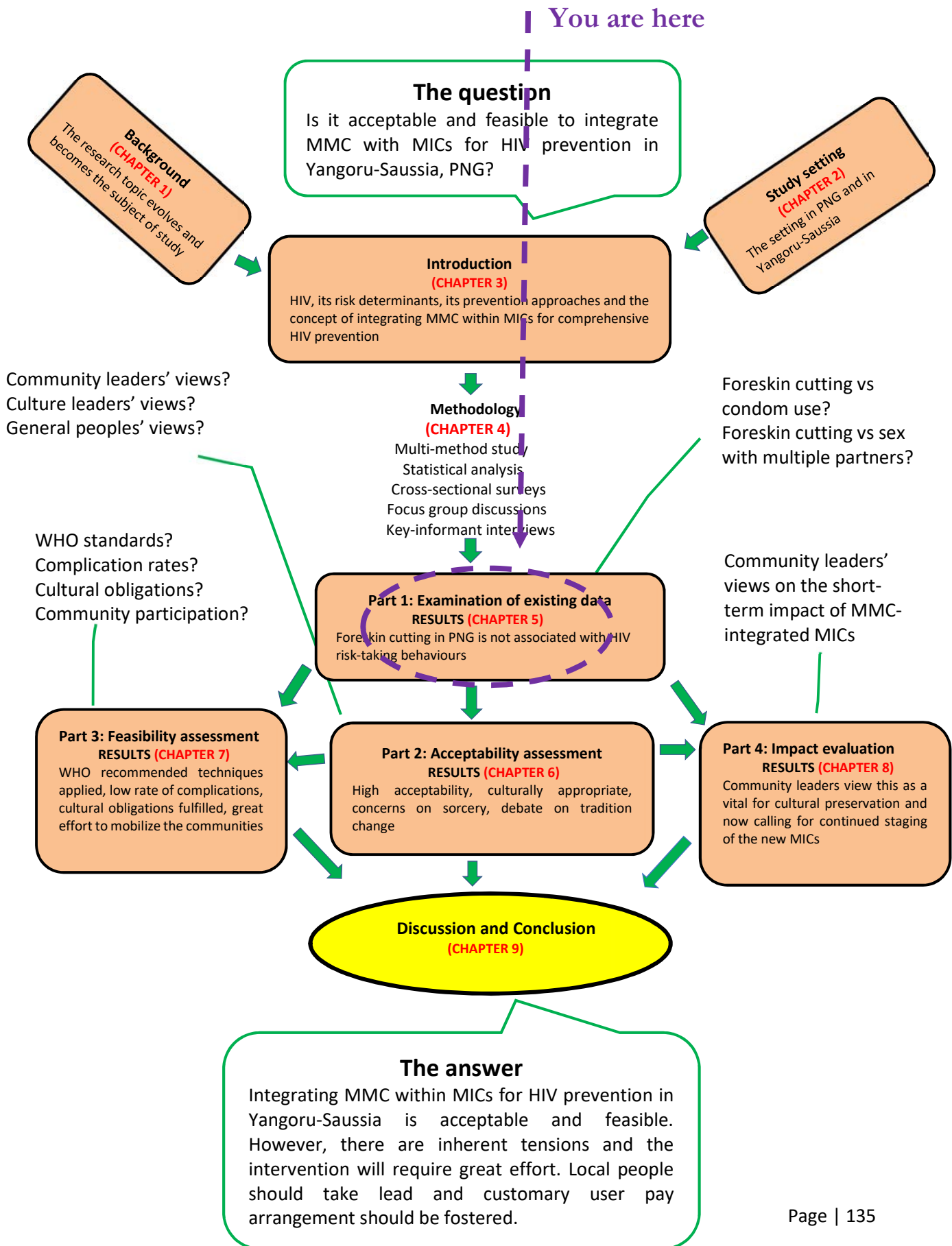
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Main points

- This chapter described the research method used in this study
- A pragmatic multi-method approach was applied and deductive and inductive reasoning employed to answer the research question.
- Specifically designed data collection forms were used
- Soft copies of the data were stored on multiple data storing devices and also uploaded onto JCU's electronic data storing system.
- Ethics for the study was granted by PNG MRAC, PNG NAC REC and JCU HREC.



5. Results: Study Part One (Risk assessment)

Summary

The previous chapter (4) showed that a multi-method design was employed in this study. Part One of this multi-method study was examination of existing data. In this chapter, I will provide the results of Part One of the study. The results are presented as an article prepared for journal publication. It was found that foreskin cutting in PNG was not associated with key sexual risk behaviours 'sex without condom' (crude OR: 1.00, CI: 0.73-1.37, p: 0.99; adjusted OR:0.89, CI: 0.62-1.27, p: 0.51) and 'number of lifetime female sexual partners' (crude OR: 0.79, CI: 0.59-1.06, p: 0.12; adjusted OR:1.06, CI: 0.75-1.51, p: 0.74).

5.1. Foreskin cutting in Papua New Guinea is not associated with sexual risk behaviours

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5.2. Abstract

5.2.1. Background

WHO/UNAIDS recommend scaling up male circumcision (MC) as an intervention to reduce HIV transmission in settings that have high HIV prevalence, low MC rates and heterosexual HIV transmission. MC for HIV prevention could be appropriate in some locations in Papua New Guinea (PNG) that fulfil the WHO/UNAIDS criteria. However, it was not known if circumcised men would increase their sexual risk behaviours (following MC) and counter the HIV prevention benefit of scaling up MC. Thus, the aim of this study was to investigate the association between MC and sexual risk behaviours among men in PNG.

5.2.2. Methods

Data from 742 sexually active men from a multi-site cross-sectional study in PNG were analysed. Detailed analyses (including multivariate modelling) of the potential influence of MC and demographics on reported key sexual risk behaviours ((i) sex without condom and (ii) sex with multiple female partners) were conducted.

5.2.3. Results

Of the 742 men, 56.6% reported 'cut' foreskin: 9.7% circumferential cut and 46.5% longitudinal cut. Sex without condom (at last sex) was indicated by 66.3%. Median number of lifetime female sexual partners of study participants was 6. Foreskin cutting had no influence on the rate of 'sex without condom' (crude OR: 1.00, CI: 0.73-1.37, p: 0.99; adjusted OR: 0.89, CI: 0.62-1.27, p: 0.51) or on the 'number of lifetime female sexual partners' (crude OR: 0.79, CI: 0.59-1.06, p: 0.12; adjusted OR: 1.06, CI: 0.75-1.51, p: 0.74).

5.2.4. Conclusions

Foreskin cutting is not associated with sexual risk behaviours reported among the surveyed sample. Comparative studies could ascertain the actual risk of HIV acquisition among foreskin-cut men. It is clear though, that dispensing of sexual health information should be an integral part of any MC program in PNG.

5.3. Background

The World Health Organization and the Joint United Nations Program on HIV/AIDS (WHO/UNAIDS) recommend scaling up male circumcision (MC) – the complete removal of the penile foreskin at health clinics – to reduce the transmission of human immunodeficiency virus (HIV) in settings that have high HIV prevalence, low MC rates and heterosexual HIV transmission [1]. This recommendation followed evidence from three randomized controlled trials in Africa, which showed that MC had up to 60% efficacy in preventing heterosexual HIV acquisition in men [2-4]. Mathematical modelling also showed that in areas with low MC rates, an MC uptake of 80% could reduce HIV prevalence by as much as 67% and avert significant costs to health systems [5, 6].

Scaling up MC for HIV prevention may be appropriate in some locations in PNG [7-16]. An estimated 0.9% of the population are living with HIV (although the prevalence varies between the four regions and twenty provinces), the main mode of transmission of the virus is heterosexual intercourse, and only 10% of the adult male population are circumcised, while nearly half (47%) are partially circumcised [17-20]. In addition, preventing HIV through a MC scale-up intervention is relevant in this setting given that MC is largely inaccessible and majority of the men who prefer MC are taking great risks (including dying from blood loss and wound infection) when undergoing non-medical forms of foreskin cutting or longitudinal cuts outside health settings [7-9].

Men decreasing condom use or increasing their number of sexual partners following MC could counter the HIV prevention benefit of scaling up MC in PNG [21-26]. This change in sexual risk behaviours was a major reason for some women and men objecting to MC in PNG [27-30]. Hence, it is vital that any relationship between foreskin cutting and sexual risk behaviours is investigated before MC scale-up is considered for HIV prevention in selected locations in PNG.

This study was therefore conducted to investigate the association between foreskin cutting and sexual risk behaviours among men in PNG. In this paper, we present the results and offer policy-guiding suggestions for future MC programs in PNG.

5.4. Method

Data from a large cross-sectional study conducted from 2010 to 2011 at four sites in PNG (Divine Word University (DWU), Pacific Adventist University (PAU), Porgera Mine, and Popondetta Oil Palm Plantation) were examined to assess the association between foreskin cutting and sexual

behaviours. The main aim of the original study was to assess the acceptability of MC for HIV prevention in PNG. A total of 861 men completed questionnaires (in the original study) recording a wide range of information about the acceptability and feasibility of MC in PNG. The main results were published elsewhere. Of special note here is that 76% of uncircumcised men were willing to be circumcised if the procedure produced a health benefit [7].

In the study presented here, data from men who reported having ever had penetrative intercourse and who recorded their foreskin cutting status were analysed. The key sexual risk behaviours ('sex without condom at last sex' and 'sex with 6 (median) or more lifetime female partners') were compared between men with and men without a cut foreskin. Men in this study were 18 years and older, were students at DWU and PAU or were workers at Porgera mine and Popondetta Oil Palm plantation.

5.4.1. Data analysis

Data was analysed using Statistical Package for Social Sciences (SPSS) version 25. Categorical variables are summarized as percentages and numerical variables as medians with inter-quartile ranges since the underlying distributions proved to be skewed. Exact versions of chi-square tests were employed to assess associations between categorical variables. Logistic regression analyses were used to test the likelihood of men with foreskin-cut engaging in sexual risk behaviours and to adjust for potential confounding by site, age, region-of-origin, level-of-education and church-denomination. Results of logistic regression analyses are displayed as crude odds ratios (crude OR) and adjusted odds ratios (adjusted OR) together with their 95% confidence intervals (CIs) and p-values. An alpha level of 0.05 was chosen for all statistical tests. [31].

5.4.2. Ethical considerations

Ethical approval was given by James Cook University, Divine Word University and Pacific Adventist University Human Research Ethics Committees, PNG National AIDS Council Secretariat Research Advisory Committee and Papua New Guinea Medical Research Advisory Committee [7].

5.5. Results

5.5.1. Demographic characteristics of study participants

There were 742 men from four sites: DWU 158 (21.3%), PAU 145 (19.5%), Porgera 224 (30.2%), and Popondetta 215 (29.0%). The age range of the sample was 18-65 years (median: 25.5, IQR: 22.0-33.0). Forty-six percent (n=341) of men were married. Men from the Highlands region made up almost half

of the sample (47.9%, n=354) while men from Southern, Momase and New Guinea Islands regions made up 27.9% (n=206), 16.1% (n=119) and 8.1% (n=60) respectively (3 missing values). Nearly two-thirds of the participants (n=473) had secondary school and lower levels of education. All participants identified with Christian denominations: Protestant churches 57.6% (n=427); Seventh Day Adventist (SDA) 29.0% (n=215); and Catholic 13.4% (n=99). Median number of lifetime sexual partners was 6 (Range 1-200; IQR 3-15).

5.5.2. Demographic Associations with foreskin cutting

Of the 742 men in the study, 56.6% (n=417) reported a 'cut' foreskin, comprising longitudinal cut 46.5% (n=345) or circumferential cut 9.7% (n=72) (missing values=5). The prevalence of foreskin cutting (circumferential/longitudinal/no-cut) varied considerably by site, age, marital-status, region (of origin), education-level, age at first sex and number of lifetime sexual partners. There was no significant difference in the prevalence of foreskin cutting by Christian denomination and condom use (or non-use) sexual characteristic (Table 1).

5.5.3. Demographic Associations with 'sex without (or with) condom at last sex'

The frequency of sex without condom (at last sex) reported by study participants was 67.1% (n=492) (missing values=9). This sexual risk behaviour varied significantly by site, age group, and Christian denomination. There was no difference in this sexual risk behaviour by marital status, region of origin or education level (Table 2).

5.5.4. Demographic Associations with '6 or more (or less) lifetime female sex partners'

Overall, 49.2% (n=360) reported having had sex with six or more female partners. This sexual risk behaviour differed significantly by all demographic characteristics (Table 3).

5.5.5. Foreskin cutting and odds of engaging in sexual risk behaviour

The observed associations between foreskin cutting and key sexual risk behaviours (sex without condom and sex with multiple partners) (detailed in Table 2) were additionally assessed by Logistic Regression analyses to assess the odds of cut men engaging in sexual risk behaviours and to control for potential confounding (see Table 3 and Table 4) by site, age, education level, region of origin and church denomination.

It was found in the bivariate model that men with foreskin-cut (longitudinal or circumferential) were no more likely than men without foreskin-cut to have sex without condom (crude OR: 1.00, CI: 0.73-1.37, p: 0.99), and cut men were 21% less likely than uncut men to have sex with greater than average number of lifetime female partners, although this likelihood was not significant (crude OR: 0.79, CI: 0.59-1.06, p: 0.12) (Table 4). In the multivariate model, there were noticeable trends that were mainly age related. It was found that cut men would tend towards having sex without condom (adjusted OR: 0.89, CI: 0.62-1.27, p: 0.51) and having fewer than average number of lifetime female partners (adjusted OR: 1.06, CI: 0.75-1.51, p: 0.74). However, these trends were not significant. The ORs (crude or adjusted) are negligible given that the confidence intervals (CI) in the models crossed over 1.00 [31].

Table 1. Demographics and sexual risk behaviours by foreskin cutting

Characteristics	Total=742 n	Circumferential Cut = 72 %(n)	Longitudinal cut = 345 %(n)	No cut = 325 %(n)	p-value
Site					
DWU	157	12.1 (19)	53.5 (84)	34.4 (54)	<0.01
PAU	141	16.3 (23)	54.6 (77)	29.1 (41)	
Porgera	224	6.7 (15)	35.3 (79)	58.0 (130)	
Pop	215	7.0 (15)	48.8 (105)	44.2 (95)	
*5					
Age group					
Up to 25	343	9.0 (31)	58.0 (199)	33.0 (113)	<0.01
26 -35	206	9.7 (20)	42.7 (88)	47.6 (98)	
36+	138	10.9 (15)	22.5 (31)	66.6 (92)	
*55					
Marital status					
Unmarried	398	10.3 (41)	56.8 (226)	32.9 (131)	<0.01
Married	339	9.1 (31)	35.1 (119)	55.8 (189)	
*5					
Region					
NG Islands	57	19.3 (11)	54.4 (31)	26.3 (15)	<0.01
Highlands	353	7.4 (26)	44.5(157)	48.1 (170)	
Momase	119	15.1 (18)	58.8 (70)	26.1 (31)	
Southern	205	8.3 (17)	41.5 (85)	50.2 (103)	
*8					

Education level					
Secondary	470	8.1 (38)	43.6 (205)	48.3 (227)	<0.01
Tertiary	262	13.0 (34)	52.3 (137)	34.7 (91)	
*10					
Church group					
Catholic	99	10.1 (10)	45.5 (45)	44.4 (44)	0.07
Protestants	425	8.0 (34)	45.2 (192)	46.8 (199)	
SDA	212	13.2 (28)	50.5 (107)	36.3 (77)	
*6					
Age at first sex					
<18	316	7.6 (24)	53.5 (169)	38.9 (123)	<0.01
18 and above	278	11.9 (33)	37.8 (105)	50.3 (140)	
*148					
Condom use at last female sex					
No	489	9.4 (46)	47.0 (230)	43.6 (213)	0.90
Yes	239	10.5 (25)	46.0 (110)	43.5 (104)	
*14					
Female sex partners					
<6	366	12.3 (45)	47.3 (173)	40.4 (148)	0.02
6 and above	360	6.9 (25)	47.0 (169)	46.1 (166)	
*16					

* Number of missing values for the given characteristic.

Table 2. Condom use (at last sex with female) by demographic characteristics

Demographic characteristics	Total =742 n	No Condom (at last sex) = 492 % (n)	Condom used (at last sex) = 250 % (n)	p-value
Site				
DWU	156	63.5 (99)	36.5 (57)	0.01
PAU	141	77.3 (109)	22.7 (32)	
Porgera	222	61.7 (137)	38.3 (85)	
Pop	214	68.7 (147)	31.3 (67)	
*9				
Age				
Up to 25	343	62.7 (215)	37.3 (128)	0.02

26 -35	204	70.6 (144)	29.4 (60)	
36+	138	72.5 (100)	27.5 (38)	
*57				
Marital status				
Unmarried	395	64.8 (256)	35.2 (139)	0.16
Married	338	69.8 (236)	30.2 (102)	
*9				
Region				
NG Islands	60	63.3 (38)	36.7 (22)	
Highlands	348	67.8 (236)	32.2(112)	
Momase	117	62.4 (73)	37.6 (44)	0.51
Southern	205	69.8 (143)	30.2 (62)	
*12				
Education level				
Secondary	468	69.2 (324)	30.8 (144)	0.19
Tertiary	260	64.2 (167)	35.8 (93)	
*14				
Church group				
Catholic	99	58.6 (58)	41.4(41)	0.01
Protestants	423	66.4 (281)	33.6 (142)	
SDA	210	72.9 (153)	27.1 (57)	
*10				

* Number of missing values for the given characteristic.

Table 3. Sex with 6 or more female partners by demographic characteristics

Demographic characteristics	Total =742 n	<6 sex partners = 382 % (n)	≥6 sex partners = 360 % (n)	p-value
Site				
DWU	155	74.2 (115)	25.8 (40)	<0.01
PAU	142	70.4 (100)	29.6 (42)	
Porgera	221	42.5 (94)	57.5 (127)	
Pop	213	29.1 (62)	70.9 (151)	
*11				
Age				
Up to 25	343	63.6 (218)	36.4 (125)	<0.01
26 -35	203	36.5 (74)	63.5 (129)	
36+	138	39.1 (54)	60.9 (84)	
*58				

Marital status				
Unmarried	396	63.9 (253)	36.1 (143)	<0.01
Married	335	35.2 (118)	64.8 (217)	
*11				
Region				
NG Islands	59	69.5 (41)	30.5 (18)	<0.01
Highlands	348	50.3 (175)	49.7 (173)	
Momase	118	57.6 (68)	42.4 (50)	
Southern	203	41.9% (85)	58.1 (118)	
*14				
Education level				
Secondary	468	43.6 (204)	56.4 (264)	<0.01
Tertiary	258	64.3 (166)	35.7 (92)	
*16				
Church group				
Catholic	98	62.2(61)	37.8 (37)	<0.01
Protestants	420	44.0 (185)	56.0 (235)	
SDA	212	58.5 (124)	41.5 (88)	
*12				

* Number of missing values for the given characteristic.

Table 4. Logistic regression analyses: foreskin cutting and key sexual risk behaviours

Sexual risk behaviour	No-cut (baseline) N=317 % (n)	Cut N=411 % (n)	Crude OR 95% CI	p-value	Adjusted OR* 95% CI	p-value
No condom at last sex	67.2 (213)	67.2 (276)	1.00 (0.73-1.37)	0.99	0.89 (0.62-1.27)	0.51
Sex with ≥ 6 lifetime female partners	52.4 (166)	47.2 (194)	0.79 (0.59-1.06)	0.12	1.06 (0.75-1.51)	0.74

* Adjusted for site, age, education level, region of origin, and church affiliation.

5.6. Discussion

This study contributes evidence vital to HIV prevention strategies in PNG. It was found in this study that foreskin cutting was not associated with sexual risk behaviours. This suggests that sexual risk behaviours occurring among men in PNG may not necessarily be related to the practice of foreskin

cutting. In other words, it is not because of foreskin cutting that men in PNG are engaging in sexual risk behaviours.

Thus, a MC scale-up intervention may be recommended for HIV prevention in selected locations in PNG where the HIV prevalence fulfils the WHO/UNAIDS criteria for a MC scale-up intervention [1]. Such interventions may not reduce condom use nor may they increase the number of lifetime sexual partners among men. Scaling up safe and accessible medical male circumcision (MMC) programs in these selected locations will contribute to the national priority agenda to reduce harm to men undergoing unsafe foreskin cutting outside health clinics in PNG [32]. MMC programs are likely to be successful given that foreskin cutting has become common-place and most people in PNG – even those originating from non-traditionally-circumcising communities –are willing for men and boys to be circumcised [7-9].

Two-thirds (67%) of men in this study reported they did not use a condom at last sex with a female. MMC programs need to inform men that the MC surgical procedure does not provide full protection against HIV and that condoms are still required, and are the best option in preventing HIV acquisition from infected sexual partners [1]. In the PNG context, accessibility and affordability of condoms will continue to be a challenge given limited availability and modest cash incomes of the majority of the population [33]. This underscores the need for any MMC scale-up to be embedded within comprehensive sexual health programs, which includes the use and distribution of condoms.

The substantial difference in foreskin cutting by site, age, marital status, and education level could reflect the shifting socio-cultural context in PNG [34-41]. Prior to colonization, Christianisation and modernization, the practice of foreskin cutting in PNG was mainly limited to some communities (especially in Momase and New Guinea Islands regions) that had penile-cutting male transition rites [42-45]. Today, foreskin cutting has become widespread as the foreskin cutting practice is spread in the mixing of cultures as people move within and between regions for education or work. Foreskin cutting has also become commonplace since Christianity has not discouraged MC (and in some locations actively encouraged MC) and that young people are increasingly exposed via the internet to the health benefits of the procedure including HIV prevention [7-9]. These factors all need to be incorporated into MMC scale-up programs that are embedded within comprehensive sexual health programs.

Although evidence provided in this study is encouraging for a MC for HIV prevention intervention in PNG, many questions on the implementation of such programs remain. The national health system has been in decline over the years [33, 46-49] and its capacity to adequately resource and fund MC scale-up programs may be limited. A ‘non-scalpel vasectomy program’ in PNG (which was studied as a proxy to MC programs) had mixed success because of funding constraints, inconsistent government support and shortage of trained health workers [50]. Clear guiding policies, open communication between implementing agencies and focussed leadership was therefore recommended [50]. In addition, foreskin cutting has deep sociocultural and religious meanings in PNG and these meanings should be incorporated into MC scale-up programs to increase the likelihood of success in implementation and in HIV prevention [7-9, 35].

5.7. Limitations

Self-reported data were used in this analysis and may reflect social desirability bias. We point out, however, that a subset of men in the original study who also underwent clinical examination (to document the types of circumcisions performed in PNG) showed 97% agreement between self-assessment and clinical assessment of MC status. This demonstrates self-reporting of MC to be highly reliable among men in PNG [51] and that sexual behaviour information provided by study participants may also be accurate. Less than 4% of men reported anal sex with another man, thus insufficient data was available for a detailed analysis for men who have sex with men. Heterosexual anal sex and sex with concurrent female sexual partners are important sexual risk behaviours [17, 52] but these data were not collected in the original study and thus not included in this assessment. Future studies should specifically include these sexual behaviours in the risk assessment.

In addition, the data in this study may not be representative of the general male population in PNG given that the sample was taken from two church-run universities and two project sites. However, men from all over the country – from different ethnic and religious backgrounds – go to school or work at mentioned study sites. It should be noted also that the subject matter concerns the sexually active age group and does not include the ‘general male population’ in the investigation. Thus, a representative sample of the appropriate age group in males have been captured in this study.

Furthermore, data used in the analysis came from participants surveyed in a cross-sectional study. Thus, the actual risks of circumcised men engaging in sexual risk behaviours in this setting needs to be prioritized and investigated in the near future.

5.8. Conclusions

Foreskin cutting in PNG is not associated with sexual risk behaviours. This indicates that sexual risk behaviours that occur among men in PNG may not necessarily be related to foreskin cutting. Thus, a MMC program may be recommended for HIV prevention in specific settings in PNG that fit the WHO/UNAIDS criteria (high HIV prevalence, low MC rates and heterosexual HIV transmission) for increasing MMC, provided, dispensing of sexual health information is included in such programs. Scaling up MMC in PNG is in line with a key national recommendation to reduce harm to men undergoing high risk foreskin cutting at non-clinical settings in PNG.

5.9. Acknowledgements

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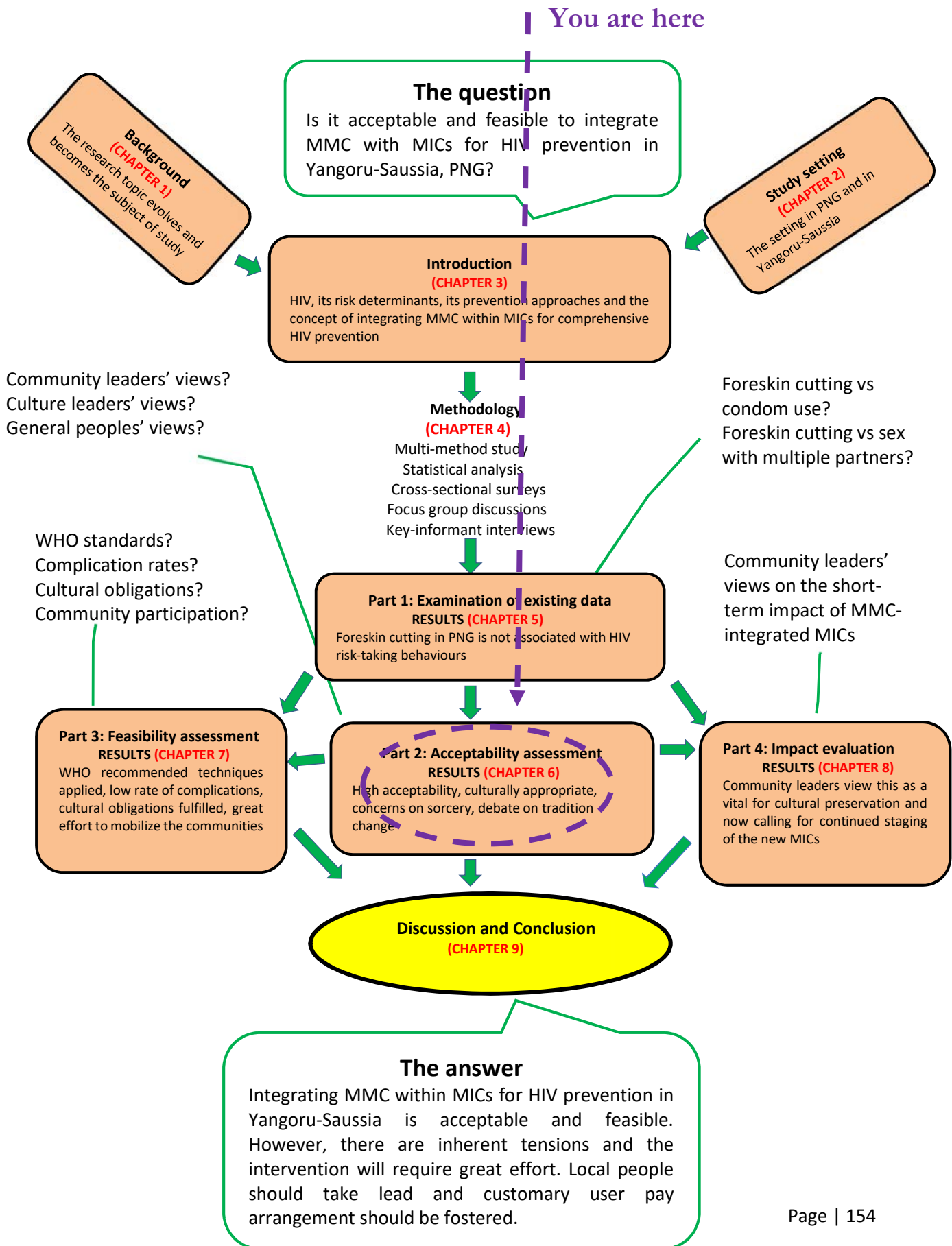
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Main points

- The possibility of circumcised men engaging in increased sexual risk behaviour and countering HIV prevention in PNG was investigated using existing quantitative data
- It was found that foreskin cutting was not associated with sexual risk-taking behaviour, that the sexual risk behaviour of cut men were similar to that of uncut men.
- However, sexual risk-taking behaviour was high in both groups compared, hence the need to include sexual health counselling with any MC program in PNG



6. Results: Study Part Two (Acceptability assessment)

Summary

The previous chapter (5) showed that foreskin cutting in PNG was unrelated to key sexual risk behaviours ('sex without condom' and 'sex with multiple female partners'). In this chapter, I will provide the results of the acceptability assessment. These results were published in a journal article (PLoS One 12(11): e0187577. <https://doi.org/10.1371/journal.pone.0187577>) in 2017, the PDF version of which is presented here. Note that data collection Phase One and Two stated in the published article actually refers to data collected in the initial 'Traditional best practice for HIV prevention study', the findings of which were summarized earlier in section 3.7 of this thesis. It was found that the integration of MMC within revived manhood rites was highly acceptable given that the said intervention provided hope in re-establishing the manhood rites and to maintain valued cultural practices. However, the substitution of traditional penile-cutting with MMC was fervently contested and some participants were uncertain about the initiative, citing the possibility of reviving sorcery, black magic and other unchristian practices associated with the bygone manhood rites. People were also critical that government support and funding for this initiative would be limited.

(see next page)

RESEARCH ARTICLE


Re-establishing safer medical-circumcision-integrated initiation ceremonies for HIV prevention in a rural setting in Papua New Guinea. A multi-method acceptability study

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Data Availability Statement: All data (except transcripts of interviews and focus groups discussions) are within the paper and its Supporting Information files. Transcriptions contain information sensitive to the culture under study and will only be made available upon request to the authors or the James Cook University Research Ethics Committee (ethics@jcu.edu.au).

Abstract

Background

Efforts to stem the spread of Human Immunodeficiency Virus (HIV) in Papua New Guinea (PNG) are hampered by multiple interrelated factors including limited health services, extreme diversities in culture and language and highly prevalent gender inequity, domestic violence and poverty. In the rural district of Yangoru-Saussia, a revival of previously ceased male initiation ceremonies (MICs) is being considered for a comprehensive approach to HIV prevention. In this study, we explore the local acceptability of this undertaking including replacing traditional penile cutting practices with medical male circumcision (MMC).

Methods

A multi-method study comprising three phases. Phase one, focus group discussions with male elders to explore locally appropriate approaches to HIV prevention; Phase two, interviews and a cross-sectional survey with community men and women to assess views on MICs that include MMC for HIV prevention; Phase three, interviews with cultural leaders and a cross sectional survey to assess the acceptability of replacing traditional penile bleeding with MMC.

Results

Cultural leaders expressed that re-establishing MICs was locally appropriate for HIV prevention given the focus on character building and cultural preservation. Most surveyed participants (81.5%) supported re-establishing MICs and 92.2% supported adapting MICs with MMC. Changes to penile bleeding emerged as a contentious and contested issue given its cultural significance in symbolizing initiates' transition from childhood to adulthood.

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Participants were concerned about potential clash with modern education, introduced religious beliefs and limited government support in leadership and funding.

Conclusions

Most people in this study in Yangoru-Saussia support re-establishing MICs and replacing traditional penile bleeding with MMC. This culturally-sensitive alignment of MMC (and HIV prevention) with revived MICs responds to a national health priority in PNG and acts as an example of providing culturally-sensitive male circumcision for HIV prevention recommended by WHO/UNAIDS. However, the implementation of this undertaking will require considerable effort, especially when modern pursuits in education and religion must be factored and when there is expectation for local authorities to lead and provide funding.

Background

Papua New Guinea (PNG) has the highest Human Immunodeficiency Virus (HIV) prevalence in the Western Pacific with nearly 1% of the adult population infected [1]. Available data suggests that the epidemic is concentrated rather than generalized, reflecting higher prevalence in urban centres, highlands provinces and among high risk-groups including sex-workers [2–4]. However, national and international health experts warn that HIV is still a critical threat in the general PNG population [3, 5]. Innovative but context-specific approaches are urgently required to limit HIV spread in this setting.

HIV prevention in PNG has had impediments on many fronts. PNG has over 800 ethnic groups, some 850 indigenous languages, multiple religious denominations and rapidly changing socio-economic and political environments [6–8]. On top of that, 85% of the population lead tribal lives in isolated rural communities where essential services including basic health care and health promotion services are barely functional or non-existent. Where such services exist, their uptake and use is often hampered by low literacy levels and language barriers [6, 7, 9]. Furthermore, the negative impacts of rapid socioeconomic developments including destabilization of traditional social structures and value systems are contributing to high levels of gender inequity, domestic violence, poverty and corruption, all of which have interwoven effects on escalating HIV transmission in PNG [10–15].

Initiation ceremonies or transition rites have been important traditional activities that have contributed to community well-being in some parts of PNG (as elsewhere) for millennia [16–22]. These ceremonies were vital particularly in precolonial days to guide young adults through their turbulent adolescent stages and enabling them to discard carefree childhood behaviours and adopt adulthood responsibilities [19]. Adult responsibilities include active participation in gender specific roles, living independent lives and respecting established social structures and customary norms. However, these traditional behaviour-guiding practices have struggled to continue alongside modern interests in career-driven education, introduced Christianity and financial freedom [22–29]. Consequent discontinuation of initiation ceremonies meant that an important avenue for behavioural guidance was denied to adolescent boys and girls in this setting.

An undertaking to re-establish male initiation ceremonies (MICs) is underway in Yangoru-Saussia, a rural district in East Sepik Province, PNG [30]. Re-establishing MICs may be difficult considering that such a venture would require reviving previously abandoned practices,

some of which are conflicting with Christianity—the dominant religion. In addition, local people, in their contemporary livelihood may not be willing to accommodate the requirements of another program in their daily routines, particularly if that program is deemed to be contradicting current efforts in pushing for modernization. Moreover, previously abandoned MICs in Yangoru-Saussia included high-risk penile-bleeding operations [18] which would need to be replaced with medical male circumcision (MMC), a safer modern alternative. However, these penile operations have significant cultural meaning including symbolising transition from childhood to adulthood [31–34]. Thus, there are significant questions that need to be answered before progress can be made towards establishing a MIC that could comprise substituting traditional penile-bleeding with modern MMC.

Replacing traditional penile-bleeding procedures with MMC could provide attractive health benefits to initiates. In the short term, substitution with MMC may prevent adverse events and reduce health risks to individual participants who would otherwise be subjected to the high-risk traditional penile-bleeding procedure. In the long term, the health benefits could include prevention of Human Immunodeficiency Virus (HIV)—as demonstrated by three randomized controlled trials [35–37]—and lowering disease risks (including of certain cancers) related to Human Papilloma Virus (HPV) [38–40]. Furthermore, if MMC at MICs could be complemented with HIV counselling and testing, a comprehensive approach to HIV prevention and a culturally relevant public health program could be realized in this contemporary setting.

Re-establishing MICs could provide attractive benefits to local communities and to health service providers. To local communities, re-establishing MICs means that adolescent boys in the communities may now have access to previously discontinued traditional process of behavioural mentoring. Local communities also stand to benefit through the revitalization of cultural practices (linked to MICs) including unique artwork and traditional dances [30]. To health service providers, re-established MICs may offer two main benefits; one: community ownership and enhanced participation (because of local relevance) could lead to better outcomes in preventing adverse events and controlling HIV [41–43]; two: cost to health program budget could be minimal given that custom requires initiates and their supporters to pay for their participation. In this part of the pre-colonial world and like initiating communities across Melanesia, participation at initiation ceremonies were associated with power and dominance—traits that cannot be gained without first sacrificing or depositing something of monetary value [44–46].

The purpose of this study therefore, was to assess the acceptability of re-establishing MICs, including replacing traditional penile bleeding procedures with MMC for HIV prevention in Yangoru-Saussia, PNG. In this paper, we present the results of this acceptability assessment and discuss the implications in relation to a comprehensive approach to HIV prevention in this setting in PNG.

Method

Study design and setting

To assess the acceptability and feasibility of integrating medical male circumcision (MMC) into male initiation ceremonies (MICs) in Yangoru-Saussia district of East Sepik Province, PNG, a multi-method study was conducted in three phases.

Phase one: Focus group discussions (FGDs). In 2009, four FGDs were conducted with male elders representing each of the four government divisions or Local Level Government (LLG) areas: Numbo, Sausse, East Yangoru and West Yangoru. FGDs were conducted at respective LLG council chambers. The main aim of phase one was to gauge cultural leaders' views on most appropriate local approaches for HIV prevention in Yangoru-Saussia district of East

Sepik Province. Male leaders were first to air their views in phase one in accordance with the established patriarchal social structure [46].

Phase two: Key-informant interviews and one cross-sectional survey. In 2011, sixteen cultural leaders were interviewed and 200 people completed survey questions. Interviews and surveys were conducted at public gatherings including roadside markets (along the Sepik Highway), at villages and at or near schools and clinics. The main aim of phase two was to investigate the local peoples' views on reviving MICs for HIV prevention. Both males and females participated in this phase.

Phase three: Key-informant interviews and one cross-sectional survey. In 2015, ten cultural leaders were interviewed and 64 people completed survey questions. Similar to phase two, interviews and surveys were conducted at public gatherings including roadside markets (along the Sepik Highway), at villages and at or near schools and clinics. The main aim of phase three was to assess the acceptability of replacing traditional penile bleeding with MMC at future MICs. Both males and females participated in the survey but only men participated in the individual interviews because female cultural leaders stated that MICs was a male affair and should be discussed with men.

Participant recruitment

Purposive sampling was applied to recruit participants into FGDs (phase one) and key-informant interviews (phases two and three) [47]. A total of 40 men (10 per LLG) participated in the FGDs while 16 and 10 participants were interviewed (by same gender researchers) during phases two and three key-informant interviews. Pre-identified participants with specific cultural knowledge and community leadership positions were approached in a respectful manner and requested to share their views at FGDs or individual interviews. For FGDs, participants gathered at their respective LLG council chambers on specified dates and times. Individual interviews were conducted at a time and place convenient to participants. Prior to interviews and discussions, all participants had the study explained to them and completed informed consent procedures.

Convenience sampling was applied to recruit participants for the cross-sectional surveys [47]. Phase two, 200 participants completed surveys while phase three, 64 completed surveys. Trained male and female research assistants helped administer the questionnaires (some were self-administered) to respective gender participants at roadside markets (along the Sepik Highway) and at or near health and education facilities. Persons aged 16 years (accepted as young adults in this setting) and above were approached casually and requested to share their views. People who appeared ill or mentally in-capacitated were not included. Consent procedures were conducted prior to participation.

Data collection

The FGDs (phase one) were facilitated using a specifically designed discussion guide (see [S1 Appendix](#)). This discussion guide had open-ended questions about 'past and present traditional practices'; 'HIV transmission'; and 'best approaches to HIV prevention in local communities'. Trained male research assistants facilitated the discussions in Tok-Pisin, the local lingua-franca. The voice-recorded discussions were transcribed verbatim, translated into English and stored on password protected data storing devices.

The key-informant interviews (phases two and three) were conducted using interview guides designed from information generated by FGDs (in phase one). The phase two interview guide (see [S2 Appendix](#)) had open-ended questions that prompted for detailed descriptions of initiation ceremonies and clarifications on how initiation ceremonies could help prevent HIV

in local communities. The phase three interview guide (see [S5 Appendix](#)) had open-ended questions about the possibility of including MMC at future MICs. The voice-recorded interviews (facilitated in Tok-Pisin) were transcribed verbatim, translated and stored on the devices containing FGD data.

The cross-sectional surveys (phases two and three) were conducted using structured survey forms that contained both open-ended and closed-ended questions (see [S3 Appendix](#) and [S4 Appendix](#)). For each survey, the generated information was double entered onto Microsoft Excel files, cleaned (using the 'sort and filter' function) and stored with the rest of the research data.

Data analysis

Qualitative data generated from FGDs, key-informant interviews and responses to 'open-ended questions' in surveys were analysed manually using thematic analysis. Transcribed data was colour coded and grouped initially into categories. The categorized data were then inserted under respective linking themes on a theme table and inductive and adductive thought processes were applied to weave the data into a cohesive storyline [48, 49].

Quantitative data analysis was done on SPSS version 22. Each data set (see [S1 File](#) and [S2 File](#)) from cross-sectional surveys (phases one and two) was analysed separately. Prior to analysis, data in each cleaned data set had value labels applied. Bivariate association tests between categorical variables were done using unpaired Classical Chi-square test [50, 51].

Ethical considerations

All study participants provided informed written consents prior to participating in the study. Participants 16–17 years of age (recruited in the cross-sectional surveys) were regarded in the local cultural context as young adults and were allowed to provide their own informed written consents. These ethical procedures were reviewed and endorsed by Divine Word University Research Ethics Committee—approval date: 10th November 2009 (phase one); PNG National AIDS Council Research Advisory Committee grant RES10 026 (phase two) and PNG Medical Research Advisory Committee grant MRAC 14.33 and James Cook University Research Ethics Committee grant H6006 (phase three).

Results

Most cultural leaders interviewed in phase one of this study expressed a desire to have a socio-cultural approach to HIV prevention that reflected local history and culture in Yangoru-Sausia. Initiation ceremonies (including female ceremonies) were depicted as mediums for education (pre-colonial schools) that had an emphasis on character building. Leaders stated that there was a general deficiency in moral standards in contemporary communities. Initiation ceremonies were seen to be able to instil positive values to initiates to improve their lives, their health and thereby protect them and their families from HIV. Not only this, but those traditions were an excellent way to preserve local cultural practices and male initiation ceremonies (MICs) were therefore further investigated in this study.

Subjects and activities of the old male initiation ceremonies (from phases one and two)

Local cultural leaders reported that the old MICs could last from 3 months to a year or more and was guided by two major objectives. The first objective was to transfer existing traditional knowledge and skills from old generation men to new generation men, and the second was to

toughen initiates' physical, emotional and mental faculties. The latter was basically an opportunity for initiates to prove their worth as capable men: men able to withstand pain and undesirable emotions.

To achieve the first objective, leaders described that cultural subjects were taught at secluded men-only quarters commonly referred to as 'hausman' or 'hausboy'. The subjects taught included '*Miye-Hru Miyekwo*' (Garamut or slit-gong drum communication), '*Lomo-Hangu*' (traditional song and dance), '*Pilanang-Rhambanang*' (Arts and Craft), '*Paiye-Nangri*' (Public Speaking), '*Maiye-Tachk*' (Witchcraft and Sorcery). During the process of mastering the above subjects, the initiates also learnt about their spirit totems, customary relationships and obligations and land boundaries and potential conflicts. To achieve the second objective, leaders explained that the initiates had to endure several trials. Initial trial was separation from family especially parents and siblings. At some stages, the initiates go without food and water and are brought into the *huelombo ka* (spirit house). Towards the end of the ceremony the initiates were reported to be thrashed with fresh sticks, rubbed with stinging nettles and the penis cut to cause bleeding.

According to local cultural leaders, penile bleeding happened at a designated spot in a stream. A sharp object such as a cassowary bone was used to split open the glans from the urethral end. The consequent pain and bleeding was described as being symbolic of severing an initiate's ties with his mother and therefore his childhood. Cultural leaders interviewed were not able to specify the amount of blood lost because the released blood (which is considered as old or waste blood) went into the stream and was washed away. However, cultural leaders recalled that blood loss was substantial. The effect of releasing this old or waste blood was said (by some cultural leaders) to make a man feel energetic and appear lighter in complexion.

"Yeah a great deal (of blood-loss). It's this old, waste blood that will be released. Two to three days after releasing this waste blood, you will see a lightness in your skin and you will be smart in anything you want to do, play soccer or fight, anything; it's just normal to you"
Male leader—West Yangoru LLG.

Motivators to revive male initiation ceremonies (from phases one, two and three)

The desire to revive MICs was high in those interviewed. Participants generally spoke with respect and renown of the past initiation ceremonies and shared insights of the courage, strength and wisdom that come with it. Participants stated that initiated men (and women) had a heightened ability to reason and discern between 'right' and 'wrong' and that they demonstrated the strength and courage to choose and do that which was 'right'. This ability for men to choose to do 'right' according to cultural leaders was how HIV could be prevented through MICs. Initiated men were said to take more responsibility for their actions including limiting sex to marital relationships and therefore reducing the risk of acquiring HIV. The participants highlighted that this quality (of wisdom and integrity) was missing in current times. Many participants, even those with high level education and regular church goers, viewed 'a future revival of MICs' as an opportunity to re-establish the old source of wisdom and integrity to complement existing value systems. Study participants also pointed out that many challenges currently faced in the communities, including law and order, domestic violence and HIV/AIDS could be addressed through MICs. Revival of MICs was therefore seen to have the potential to facilitate safe, healthy and prosperous communities in Yangoru-Saussia, in accordance with the national development strategy—PNG Vision 2050 [52]. A prominent cultural leader summarised the desire to revive MICs with this metaphorical remark:

“A revival of male initiation ceremonies is not wrong, it is the right thing to do and many people are waiting for someone to start it. Put the fire at one spot and everywhere in Yangoru-Saussia will come alight with the fires of initiation ceremonies”. Male cultural leader—East Yangoru LLG.

Subjects and activities to be excluded or modified (from phase three)

Several cultural activities of the past MICs were deemed to be unsuitable or of little use for modern times by the study participants, and therefore needed to be excluded or modified. Just about all participants had serious concerns with the possibility of including sorcery and *Sanguma* (malicious witchcraft) as subjects at future MICs. It was emphasised that a revival of the old MICs should focus on elements of past programs that benefited the wider community rather than on elements that brought harm on individuals and their families. Most illnesses and deaths of the past and even of current times were attributed to sorcery and witchcraft and any revival of those old malicious elements, most people viewed, could receive unrelenting opposition from many parties including, churches, local authorities and potential participants. While people spoke earnestly about the need to re-establish the native tradition, there was obvious hesitation at the perceived possibility of reviving sorcery and *Sanguma* concomitantly with the MICs.

Most study participants were open to suggestions to increase participant safety by substituting penile bleeding with MMC. However, not all participants supported the suggestion to completely exclude penile bleeding from MICs. There were some cultural leaders who showed hesitation and indirect disapproval. Penile bleeding was highlighted by many respondents as being important or central to MICs. In other words, complete exclusion of penile bleeding from MICs could potentially decrease the meaning and cultural significance of the entire initiation process. In realizing this significance, some cultural leaders pointed out that some men today use razor blades to make small nicks on the glans penis to release small amounts of blood. Some participants suggested future MICs adopt this milder form of penile bleeding.

“Nowadays, some men bleed the penis with razor blades. We could do the same for initiates in the new program. Take them to the river and using a razor blade, make a small cut on the opening of the penile urethra and press so that blood shoots out”. Male cultural leader—East Yangoru LLG.

One interviewed female participant was direct with her disagreement on the possibility of modifying traditional MICs and of involving non-indigenous health workers to perform MMC at traditional male initiation ceremonies.

“Culture must be original. Do not bring in outsiders such as health workers into the traditional culture”. Female respondent—East Yangoru LLG (response from CSS).

Potential barriers: Few culture experts, lack in government support and limited native language use (from phases two and three)

Many respondents stated that local expertise on specific elements of the MICs was lacking and provided suggestions to cater for this deficiency. Some respondents pointed out that there were at least one or two people in the communities who had enough expertise to lead a male initiation process. Interviewed cultural leaders suggested for expert or senior cultural leaders to move between initiating communities to ensure things are done in accordance with local tradition. Regarding the teaching of individual cultural subjects, study participants indicated

that there were many local cultural leaders who had shown interest to participate as teachers. Some of these men had teaching and music backgrounds and were said to have the skills to facilitate easier and better learning experience for initiates. It was explained, for example that someone with music background might be able to structure the *garamut* beats into teachable codes and help initiates to grasp the beats and rhythms faster.

Some cultural leaders reported that they struggled to continue work on local culture because government was not supportive. These cultural leaders have on many occasions attempted to get the government to support their culture programs but almost all these attempts have been unsuccessful.

“I already started culture work but we could not maintain or progress that work because we see that there is no support from the government. Ok I have a number of custom (leaders) who are now with me (he names some of the leaders), they are ready to work but there is no one to lead and provide support so work on culture could continue”. Male cultural leader–Numbo LLG.

One of the pressing issues highlighted by local leaders was the use of local vernacular. The expert use of local native language was said to be necessary for successful facilitation of learning in matters to do with local culture. There was a general concern that while most young people can hear and understand, they cannot speak or fully express themselves in the native language. A reputable leader reasoned that the transmission of indigenous cultural knowledge between old and young generation depended very much on the language of instruction and that most matters to do with indigenous culture were intrinsically connected with the native language.

“But very important. . .they will not beat the *garamut*, our sons, they will not be able to do *Paiye-Nangri* (public speaking in local vernacular), they will not be able to ah. . .perform the *Lomo-hangu*. They must first know our *tokples* (native language). When they know the *tokples*, they will be able to beat the *garamut* . . .If not, just like me, they will find it difficult”. Community leader–West Yangoru.

Cultural leaders further expressed that, native language was dying because opportunities to engage in it were very limited and often confined to rare ceremonial activities. It was emphasized that individuals need to use local vernacular in their everyday vocabulary in order to ensure its survival. From this reasoning, interviewed leaders suggested that all verbal communications within initiation grounds be restricted to local vernacular. This restriction, participants thought, would help familiarise initiates with their native language and will also ease the facilitation of knowledge and skills transmission at future MICs.

Most survey participants supported revival of male initiation ceremonies and inclusion of medical male circumcision (from phases two and three)

One of the key questions in the phase-two cross-sectional survey was “would you support revival of male initiation ceremonies?” This survey had 200 participants– 101 (50.5%) male and 99 (49.5%) female. Median age was 36 (inter-quartile range 25–47.75). Overall, 81.5% (n = 163) supported the proposition to revive MICs. Frequency of responses by demographic characteristics shown in [Table 1](#).

One of the key questions in the phase-three cross-sectional survey was “would you support including medical male circumcision at male initiation ceremonies?” This survey had 64 participants– 36 (56.3%) male and 28 (43.7%) female. Median age was 40.5 (inter-quartile range

Table 1. Responses by demographic characteristics (phase two cross-sectional survey).

Would you support revival of male initiation ceremonies?				
	Yes % (n)	No % (n)	Total (n)	p-value
Total	81.5% (163)	18.5% (37)	200	
Data collect mode				
Interview	85.1% (114)	14.9% (20)	134	0.064
Self-administered	74.2% (49)	25.8% (17)	66	
Gender				
Male	90.1% (91)	9.9% (10)	101	0.002
Female	72.7% (72)	27.3% (27)	99	
Age group				
16–25	71.2% (37)	28.8% (15)	52	0.170
26–35	84.2% (32)	15.8% (6)	38	
36–45	85.1% (40)	14.9% (7)	47	
46+	86.3% (44)	13.7% (7)	51	
Marital status				
Married	86.1% (118)	13.9% (19)	137	0.130
Single	71.2% (42)	28.8% (17)	59	
LLG of origin				
Numbo	89.8% (44)	10.2% (5)	49	0.075
Sausse	70.0% (35)	30.0% (15)	50	
East Yangoru	82.0% (41)	18.0% (9)	50	
West Yangoru	84.3% (43)	15.7% (8)	51	
Education level				
Up to high School	81.3% (100)	17.9% (23)	123	0.927
Up to tertiary school	81.8% (63)	18.2% (14)	77	
Church affiliation				
Catholic	82.8% (77)	17.2% (16)	93	0.748
Assemblies of God (AOG)	84.0% (42)	16.0% (8)	50	
Seventh Day Adventist (SDA)	75.7% (28)	24.3% (9)	37	
Other	78.9% (15)	21.1% (4)	19	
Initiation status				
Initiated	83.5% (81)	16.5% (16)	97	0.503
Not initiated	79.8% (79)	20.2% (20)	99	

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30.25–49.74). Overall, 92.2% (n = 59) supported the proposition to include MMC at revived MICs. Frequency of responses by demographic characteristics shown in [Table 2](#).

Discussion

Re-establishing previously ceased traditional practices and adapting them with modern alternatives to address contemporary health and sociocultural needs is a relatively new area of investigation. Information presented can be of significant benefit to policy makers across many disciplines. This study to assess the acceptability of reviving and modifying male initiation ceremonies (MICs) for a comprehensive approach to HIV prevention is the first such study in Papua New Guinea (PNG). Results demonstrate a positive attitude towards establishing a safer version of the pre-colonial MICs in Yangoru-Sausia. Results also expand evidence for local, national and international policy makers to support locally appropriate HIV prevention strategies in PNG and other culturally, linguistically and geographically diverse nations [[9](#), [14](#), [31](#), [33](#), [34](#), [41](#), [42](#), [53–57](#)].

Table 2. Responses by demographic characteristics (Phase three cross-sectional survey).

Would you support including medical male circumcision at male initiation ceremonies?				
	Yes % (n)	No % (n)	Total (n)	p-value
Total	92.2% (59)	7.8% (5)	64	
Data collect mode				
Interview	90.2% (37)	9.8% (4)	41	0.439
Self-administered	95.7% (22)	4.3% (1)	23	
Gender				
Male	91.7% (33)	8.3% (3)	36	0.860
Female	92.9% (26)	7.1% (2)	28	
Age group				
17–25	90.0% (9)	10.0% (1)	10	0.325
26–35	93.3% (14)	6.7% (1)	15	
36–45	100.0% (20)	0.0% (0)	20	
46+	84.2% (16)	15.8% (3)	19	
Marital status				
Married	92.6% (50)	7.4% (4)	54	0.779
Single	90.0% (9)	10.0% (1)	10	
LLG of origin				
Numbo	91.3% (21)	8.7% (2)	23	0.840
Sausse	100.0% (7)	0.0% (0)	7	
East Yangoru	89.5% (17)	10.5% (2)	19	
West Yangoru	93.3% (14)	6.7% (1)	15	
Education level				
Up to high school	93.0% (53)	7.0% (4)	57	0.499
Up to tertiary school	85.7% (6)	14.3% (1)	7	
Church affiliation				
Catholic	92.3% (36)	7.7% (3)	39	0.686
Assemblies of God (AOG)	100.0% (8)	0.0% (0)	8	
Seventh Day Adventist (SDA)	86.7% (13)	13.3% (2)	15	
Revival	100.0% (2)	0.0% (0)	2	
Initiation status				
Initiated	91.2% (31)	8.8% (3)	34	0.748
Not initiated	93.3% (28)	6.7% (2)	30	

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Overall, participants favoured the establishment of a modified version (that includes medical male circumcision) of the previously ceased MICs. Most participants (81.5%) supported the proposition to re-establish MICs and 92.2% approved inclusion of medical male circumcision (MMC). Participants consistently expressed an appreciation of traditional practices and the value of these practices for contemporary living. Although initiation ceremonies have now ceased, almost half of the survey participants were initiated, demonstrating existence of considerable experience and knowledge of past practices in the district. Cultural leaders depicted MICs as pre-colonial schools with an emphasis on character building. MICs were therefore seen to address a perceived deficiency in moral standards in contemporary communities and be a base for preventing HIV and other social challenges.

Support for the revival of MICs was consistently high across different sectors and characteristics of study participants. The only statistically significant difference was in gender with fewer females supporting the revival of MICs than men (72.7% vs 90.1% $p = 0.002$). However, the majority of women still supported the idea. Survey participants interviewed by researchers

(because of low-literacy) were more likely to support the revival of MICs compared to those who self-administered the survey (85.1% vs 74.2% $p = 0.064$). However, both groups overwhelmingly supported the notion to revive MICs. Although not statistically significant, fewer young people, singles, Seventh Day Adventist (SDA) church affiliates and participants of Sausse local level government areas (LLG) supported revival of MICs. Lower support from young people may reflect less life experience and consequent limited understanding of MICs and the objective of reviving MICs. Conversely, lower support could portray an inclination towards modern lifestyles given the younger generations' greater exposure (compared to older generation) to modern schools and modern influences. Younger generations' lower support could also reflect their indifference towards a practice that may place them at risk of physical and emotional trauma inflicted by older men. Lower support from SDA affiliated participants may reflect the church's introduced conservative Christian religious beliefs and general reticence to support local cultural traditions [58]. Cultural practices of some villages on the plains in Sausse LLG are closer to Sepik River practices than to the rest of Yangoru-Saussia and may explain lower support (70.0%) compared to other LLGs (82.0%, 84.3%, 89.8%). In addition, some villages used sharp objects like cassowary bones to split the glans penis as outlined by our study participants while other villages used barbed bush vines to bleed the penis in a 'bottle-brushing' fashion as described by Tuzin (1980)[22]. Future research could include mapping the type of penile bleeding practices in Yangoru-Saussia and their influence on an undertaking to revive MICs.

The call for government support by some cultural leaders may actually reflect perceived barriers in structuring and financing cultural programs including MICs. In terms of finance, there could be expectations of free or government sponsored MICs and it is paramount that any finance-related communication between program planners and cultural leaders (and members of their communities) be based on replicating the 'user-pay' arrangements of the pre-colonial MICs. It must be emphasized that custom requires participants to contribute to staging MICs. Custom also obligates participants to give back something of monetary value to those who facilitate the initiation process. Thus, without a 'user-pay' arrangement, re-established MICs could lose their customary worth and significance. Regarding program structure, it is important to note that the only time available for in-school boys to participate at MICs are the official school holidays, the sum in one academic year of which is just under three months [59]. This essentially means that the initiation process that previously took 3–12 months should be accelerated. Otherwise, program planners could consider omitting ceremonial activities that appear redundant or are conflicting with modern world views. Similarly, there is need for local authorities to articulate—perhaps in a clear policy direction—a conceptual and implementation framework for cultural activities including the potential re-establishment of MICs in the district.

Sorcery and *Sanguma* (malicious witchcraft) were of major concern to participants and were named as aspects of the old MICs that needed to be excluded. Sorcery and *Sanguma* herein referred to as 'black magic'[60] are activities that participants said did not reflect contemporary values and therefore could not be included in revived MICs. In Yangoru-Saussia, most deaths and ailments are perceived to be related—even in current times—to black magic [61, 62]. Given this prevalent perception on the connection between black magic and adversities, some participants spoke against the revival of MICs because of their belief that black magic practices were to be included in the new program. Consequently, if the new program is perceived as a potential place for black magic to be strengthened, it was clear that most people would stop their young men from participating. Furthermore, most local people affiliate with Christian church denominations and oppose activities that support black magic or that

challenge Christian principles. Any undertaking to revive MICs would have greater acceptance if it is communicated that black magic would not be included.

Local people in Yangoru-Saussia are custodians of their own traditional practices and as such, their views and opinions matter to future cultural programs. In addition, incorporating local views and suggestions into future MICs is vital because it is the local people who will design, adopt and implement any modifications to their contemporary society. Furthermore, including local people in this process reinforces respect and underpins their leadership, support and participation at future programs [41, 63, 64]. Similarly, it is essential that culturally sensitive modifications be carefully considered within revived MICs. Without this, the venture risks being meaningless to the very people it was intended to benefit. Therefore, a culturally sensitive inclusion of MMC at revived MICs, to replace foreskin cutting and penile bleeding procedures at traditional MICs, would require surgical procedures that usually occur in health facilities to happen at the ceremonial grounds. Further, health workers would need to be from the local area and they should partake in the ritual restrictions as required by custom [65]. This culturally sensitive alignment of MMC with a local cultural program is an excellent example of providing culturally specific male circumcision for HIV prevention as recommended by World Health Organization (WHO) and United Nations Program for HIV/AIDS (UNAIDS) [66]. Likewise, establishing a contemporary version of MICs will be in-line with a joint United Nations Educational, Scientific and Cultural Organization (UNESCO) and UNAIDS recommendation for HIV/AIDS education to include the teaching of life-skills and balanced gender roles [67]. Moreover, aligning MMC with a local cultural program would fulfil a PNG health priority for MMC to be made accessible for men who undergo high-risk foreskin cutting at non-clinical settings in PNG [68–70].

Penile bleeding is a culturally significant ritual at MICs in Yangoru-Saussia and emerged as a contentious and contested issue in this study. Some participants were happy that old penile bleeding procedures be replaced by MMC, while others were not. The loss of blood through the penile bleeding process is symbolic of initiates severing maternal ties (and therefore their childhood) and transitioning into adulthood. It is therefore important to understand both natures of blood loss: the procedural and symbolic. That is, while MMC may provide a 'biomedically safer' option than using a cassowary bone during MICs, it may not satisfy the symbolic significance of disconnecting with childhood where pain (both physical and emotional) and blood loss is expected. In acknowledging the latter, some cultural leaders indicated that penile bleeding at future MICs could continue even if MMC were to be included. This fact points to the challenge of including modern alternatives without compromising the cultural meaning and significance of MICs in this setting. If this is the case and penile bleeding, even in its mild contemporary form (with use of razor blades) takes place at future MICs, the objective of minimizing health risks including HIV prevention could be undermined. Hence, the possibility of initiates undergoing razor-blade-induced penile bleeding must be considered and accommodated in risk-reduction plans (including for HIV prevention) for future programs.

There are limitations to this study that should be noted. Firstly, the findings and implications presented are specific to Yangoru-Saussia district and cannot be extrapolated to other settings in PNG. Yet, the rural contemporary setting in Yangoru-Saussia and the issues discussed are quite similar to other initiating indigenous communities striving to counter the side-effects of rapid modernization on local cultural practices and values. Secondly, it is acknowledged that local researchers including CM belong to the district and culture under study and raises the possibility of participant and researcher bias. Conversely, researchers' indigenous, education and health professional backgrounds may have fostered trust between participants and research team, resulting in open and honest responses [71]. Thirdly, the application of convenience sampling means that views captured in this study may not be

representative of all people in Yangoru-Saussia. However, a reasonable representation of local peoples' views may have been captured given that people in Yangoru-Saussia belong to a society that prioritises collective pursuits over individual pursuits and regularly congregate at popular meeting venues such as markets, health centres, schools and conference chambers.

Future studies should further investigate results presented in this paper. Differences in support for revived MICs by men and women should be explored. Many cultural leaders expect government support for the revival and maintenance of their native cultural practices. Subsequent enquiry should investigate cultural leader expectations and provide an assessment on the practicality or otherwise of reviving MMC-integrated MICs with or without government support. In addition, the health benefits of penile blood-letting claimed by some participants of this study could be an interesting area for further studies. For instance, the health benefits claimed could be related to therapeutic phlebotomy, although the point of blood-letting is different. Therapeutic phlebotomy refers to deliberate release of blood (usually from external veins) to treat certain medical conditions. This therapeutic option is being investigated for its potential in reducing blood viscosity and enhancing oxygen circulation and tissue perfusion [72–74]. It is also important to note that the local native language has become second-place to introduced languages, local culture experts are too few and government support is lacking. Moreover, program planners should note that older men in this setting could use MICs to place adolescent boys under duress and every effort must be made to ensure that future MICs are free of coercion, violence and abuse. These multiple and interlinked issues all need to be carefully considered in the undertaking to re-establish safer MICs in Yangoru-Saussia, PNG. Insights to these issues will emerge through ongoing research by CM and his team of local and international researchers over the coming years.

Conclusions

This study broadens evidence supporting locally appropriate HIV interventions in PNG and other diverse cultural, linguistic and geographical settings. Most people in this study in Yangoru-Saussia accept safer MMC-integrated MICs as a viable option for their contemporary society given the focus on character building and cultural preservation. However, implementation of modified MICs will require considerable effort, especially when modern education, introduced religion, contemporary economic pursuits and abuse prevention must be incorporated. Similarly, penile bleeding is a culturally significant ritual and emerged as a contentious and contested issue in this study. Allowing blood loss at initiation is thought by some to help a boy transition into a man and needs to be carefully considered in future programs. A culturally sensitive alignment of MMC with a proposed local cultural program is an example of providing culturally-specific male circumcision for HIV prevention as recommended by WHO/UNAIDS. It also responds to a national health priority to avail safe-circumcision to men risking foreskin cutting at non-clinical settings in PNG.

Supporting information

S1 Appendix. Focus group guide.
(PDF)

S2 Appendix. Interview guide 1.
(PDF)

S3 Appendix. Structured interview questionnaire 1.
(PDF)

S4 Appendix. Structured interview questionnaire 2.

(PDF)

S5 Appendix. Interview guide 2.

(PDF)

S1 File. Phase two survey data.

(SAV)

S2 File. Phase three survey data.

(SAV)

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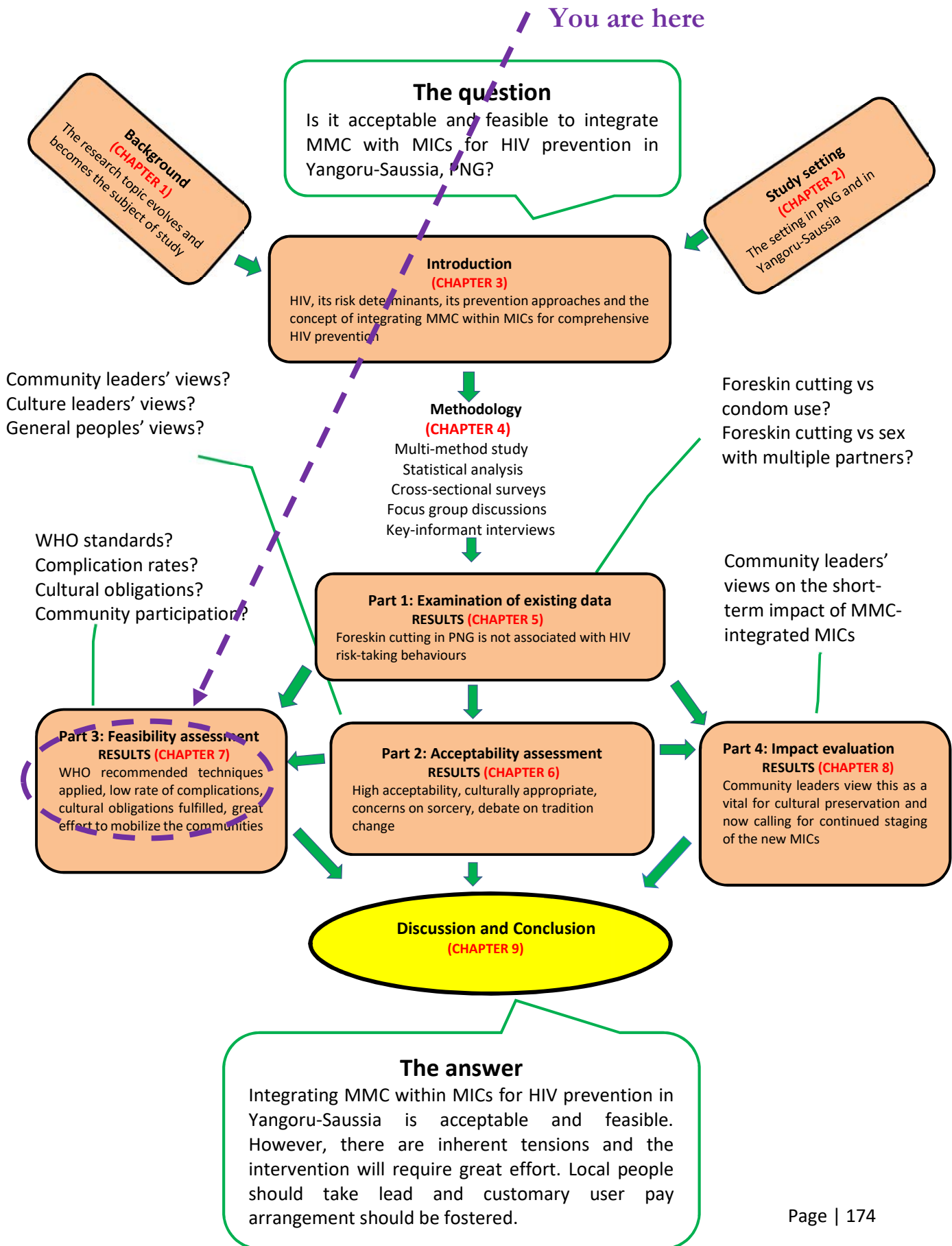
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Main points

- The acceptability of substituting traditional penile cutting operations with MMC was investigated.
- The change was highly acceptable, although there were many dilemmas and debates that need to be considered.
- Blood letting was a significant component of the rite, without which the ceremony risks being meaningless.
- Black magic, unwanted witchcraft and other unchristian practices associated with the old manhood rites were not supported by the local people.
- Modifications also needed to be made to cater for school-going boys in contemporary Yangoru-Saussia.



7. Results: Study Part Three (Practical feasibility assessment)

Summary

The previous chapter (6) showed that the substitution of traditional penile cutting with MMC and revival of previously ceased rite was highly acceptable although there were tensions and dilemmas including concerns on significance of the rite and revival of unwanted practices. In this chapter, I will provide the results of the practical feasibility assessment that occurred in Part Three of the study. The results are presented as an article prepared for journal publication. It was found in this part of the study that the MMC operations were clinically safe and culturally appropriate. However, great effort was needed in mobilizing the required resources including of assembling the medical team.

7.1. Incorporating medical male circumcision within traditional manhood rites for comprehensive HIV prevention in Yangoru-Saussia, Papua New Guinea: an observational descriptive study

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7.2. Abstract

7.2.1. Introduction

Male circumcision (MC) is protective against HIV and incorporating it medically within traditional manhood rites presents a unique opportunity for comprehensive HIV prevention in traditionally-circumcising or penile-cutting communities. This study assessed the cultural, clinical and economic feasibility of incorporating medical male circumcision (MMC) within traditional manhood rites in Yangoru-Saussia, Papua New Guinea (PNG).

7.2.2. Methods

An observational descriptive study conducted during a traditional manhood rite staged in 2015 in Yangoru-Saussia rural district in PNG. Questionnaires employed by this study were designed using information from the WHO toolkit for male circumcision and data from our earlier PNG MC studies. A field journal describing activities culminating in the staging of the 2015 manhood rite was also kept by the lead researcher.

7.2.3. Results

An operating theatre (built from bush materials) was established within the confines of a ritual seclusion. Male health workers of local origin resided within the ritual enclosure, fulfilled all customary obligations and operated on initiates using standard clinical practice. Forty-five men were screened (and counselled and tested for HIV) and forty underwent the MMC operation. There were two (5%) post-operative complications (bleeding and infection respectively) which were promptly managed. The average cost per MMC procedure was USD33.33, excluding overhead costs.

7.2.4. Conclusions

Incorporating MMC within traditional manhood rites in Yangoru-Saussia is culturally, clinically and economically feasible. These results are vital to implementing a comprehensive HIV prevention

strategy that is specific to the Yangoru-Saussia cultural context. Results also outline a way forward in blending culture and health for HIV prevention in traditionally-circumcising or penile-cutting communities in PNG and elsewhere. This new HIV prevention approach directly responds to WHO/UNAIDS recommendation for comprehensive HIV prevention. It also fulfils a national priority agenda to reduce harm to men undergoing foreskin cutting at non-clinical settings in PNG.

7.3. Background

Male circumcision (MC) prevents heterosexually acquired human immunodeficiency virus (HIV) in men by up to 60% (1-5). Thus, the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) recommend scaling up this surgical intervention in settings that have high HIV prevalence and low MC rates (6). The consideration of increased sexual HIV-risk behaviours following MC has also led to WHO/UNAIDS recommending that MC be provided as part of a ‘HIV prevention package’ rather than as stand-alone interventions (6). A HIV prevention package that involves incorporating medical male circumcision (MMC) within traditional manhood rites – sacred rituals that attuned young people to accepted standards of behaviour – presents a unique opportunity for comprehensive HIV prevention in traditionally-circumcising or penile-cutting communities (7,8).

In Eastern and Southern Africa – the region with three-quarters of the world’s HIV burden – the up-scaling of MC has resulted in upwards of 15 million men circumcised since 2008 (9). Some countries in this region also have foreskin cutting traditional manhood ceremonies that are contributing to increasing the number of men circumcised (10). Foreskin cutting at these manhood ceremonies, however, have not always been free of serious adverse events and adoption of safer practices such as using aseptic techniques and substituting traditional foreskin cutting with clinic-based MMC is being considered (11-16).

Papua New Guinea (PNG), a nation of 7 million people in the South Pacific has an estimated HIV prevalence of 0.9 % (17). Timely interventions including the scaling-up of the population’s accessibility to HIV testing and anti-retroviral therapy has contributed to preventing the escalation of HIV in this moderate prevalent setting (17-20). Another factor that helped in limiting HIV propagation was the widespread practice of traditional and contemporary foreskin cutting (21-25). Studies investigating the acceptability and feasibility of a MC-based HIV intervention in PNG have demonstrated that foreskin cutting practices were already in existence with nearly half the male population partially

circumcised (with longitudinal foreskin cuts) and about one-in-ten men fully circumcised (with circumferential foreskin cuts) (21-28). However, most of these foreskin cutting practices are occurring at non-clinical settings and men in PNG are at increased risk of serious adverse events (21). Hence, harm reduction for men undergoing foreskin cutting at non-clinical settings was recommended as a priority agenda at a MC national policy forum in PNG (26).

Foreskin cutting at non-clinical settings are risks taken by many PNG men to attain proof of manhood and to establish an enduring connection with penile-cutting traditions of the past (21-23, 29-31). Social and anthropological studies have shown that some communities in PNG had bloodletting manhood ceremonies that included penile-cutting operations (7, 32-35). These penile operations occurred at the final stages of the rites to symbolize an initiate's transition from boyhood to manhood. In Northern PNG, two forms of ritualized penile-cutting were documented. In one form, barbed bush vines were inserted in a 'bottle-brushing fashion' into the penile urethra; in the other form, pointed objects such as cassowary-bone daggers were used to split the glans penis and accompanying foreskin (7, 33, 36). Both forms of penile-cutting and the manhood rituals that gave meaning to them, have now ceased (7, 37).

Yangoru-Saussia – a rural district in East Sepik Province – is located between the Sepik River and the coastline in the North of mainland PNG (38). Traditionally, young men in this district went through boy-to-man transition rites, acquiring skills and values required for manhood (7, 39, 40). Apart from gaining acceptance into manhood, the skills and values acquired at those ceremonies also aligned young men to society norms and standards of behaviour thus, were vital to community well-being. However, these manhood rites were discouraged by colonial administrators because of the high-risk penile-cutting operations. Furthermore, some ritual activities conflicted with introduced Christian beliefs and devoted church-goers firmly opposed the continued staging of manhood rites in this setting (7, 37).

To make HIV prevention appropriate within the cultural context in Yangoru-Saussia and other traditionally-initiating rural communities in East Sepik Province, the East Sepik Provincial AIDS Committee (ESPAC), a branch of the PNG National AIDS Council, embarked on modifying and re-establishing the previously ceased manhood rites (8, 29). Modifications to these rites included exclusion of unchristian practices and culturally sensitive integration of MMC (8). HIV counselling and testing was also included in that HIV prevention package. An acceptability assessment conducted

by our team showed that although some concerns exist about this change to tradition, most people in the community (including cultural leaders) were supportive (7). However, the feasibility of incorporating MMC within traditional manhood rites in this setting was not known.

Therefore, the purpose of this study was to assess the feasibility – in terms of fulfilling cultural obligations, adhering to clinical standards, and maintaining comparable (to other MC HIV interventions) operational costs – of incorporating MMC within traditional manhood rites in Yangoru-Saussia, PNG. In this paper, we present the results and provide policy-guiding discussions in relation to contextualising WHO/UNAIDS-recommended comprehensive HIV prevention in Yangoru-Saussia and other traditionally-circumcising or penile-cutting communities in PNG and elsewhere.

7.4. Method

7.4.1. Study design and setting

An observational study conducted during a manhood rite staged in 2015 in Yangoru-Saussia. This was part of a multi-method study investigating the acceptability and feasibility of integrating MMC and re-establishing traditional male rite of passage ceremonies for HIV prevention in Yangoru-Saussia district (8).

There are four local level governments (LLG) or administrative divisions in Yangoru-Saussia and a good part of the district is well connected by road: the Sepik highway runs through the length of the district with numerous feeder roads connecting LLG council chambers, health centres, schools, churches and village communities (38). The rate of change of the local cultural practices is expected to increase substantially given the rapid infrastructural and economic developments currently occurring in the district (41-43). To complement these developments with tourism promotion and cultural preservation, a group of local people are reviving the sacred 'haus tambaran' or spirit house tradition (44). The haus tambaran tradition is essentially about manhood rites and transmission of traditional skills from culture experts to novice participants (7).

7.4.2. Data collection instruments

Data used in this study came from two specifically designed questionnaires (Appendix IX: Form 1 and Form 2) and a field journal kept by the lead researcher (CM). The questionnaires were designed using information from the WHO tool-kit for MC under local anaesthesia and from data reported in our earlier PNG MC studies (45, 7, 21). Form 1 had two sections: the first section prompted for

information on the setting (at which the MC procedures were conducted), the general MC process, wound care and instrument sterilization; the second section requested for expenditure information including expenses on medical supplies and hiring of medical personnel. Form 2 had three sections: the first section prompted for information on client preparation and included ‘state of foreskin (cut/uncut); the second section requested for MC procedural information such as techniques applied and time-taken per client; and the third section prompted for information on complications encountered and how these complications were managed.

7.4.3. Participant recruitment

The men enrolled in this study were from five village communities that participated in the 2015 modified manhood rite. Initiates from each participating village underwent surgery on designated operation days. Ritual participants from the four outlying villages were transported at night to the makeshift operating theatre located within the initiation enclosure of the centrally located participating village. Next day, at commencement of operation, the men sat around the ‘client waiting and recovery area’ (see Figure VII) and health workers facilitated group discussions on HIV and other sexually transmitted infections. During this discussion, individual participants were called to a nearby shelter where they underwent HIV counselling and testing. Following these preliminaries, the initiates completed one-on-one informed-consent procedures with health workers and joined the surgery queue.

7.4.4. Data collection

The researcher (CM) recorded the particulars of the overall medical operation including the medical set-up, instrument sterilization and the general MC process in Form 1 (Appendix IX) on the final day of operation. The specifics of individual MMC procedures were recorded by the respective MC providers in Form 2 (Appendix IX) (45 completed copies) at the end of each completed surgical procedure. Details of important pre-ceremony activities including event promotion and fundraising campaigns were recorded by the lead researcher in a field journal as those activities transpired.

7.4.5. Data analysis

Thematic analysis was employed to examine the qualitative data (46, 47). The gathered data were categorised and placed under pre-identified themes (most themes adapted from sectional headings in the data collection forms). Data supporting each of these themes were developed into sentences that linked together to form cohesive paragraphs. The paragraphs were then arranged in the order of

progression from operation set-up to ceremony completion. For quantitative data, frequencies and measures of central tendencies were computed in Microsoft Excel and SPSS statistical software version 22 (48, 49).

7.4.6. Ethical considerations

All MC procedures were conducted with participants' signed informed consents. In addition, study forms were devoid of client names and other identifying information. Ethical clearance for the multi-method study on 'the acceptability and feasibility of integrating MMC and re-establishing traditional manhood rites for HIV prevention' was granted by PNG National AIDS Council Secretariat Research Advisory Committee (PNG NACSRAC) grant number RES10 026; PNG Medical Research Advisory Committee (PNG MRAC) grant number MRAC 14.33; and James Cook University Human Research Ethics Committee (JCUREC) approval number H6006.

7.5. Results

The MC procedures were provided in a makeshift operating theatre built from bush materials. Basic hygiene practice were followed and WHO-recommended MC techniques applied. Forty-five men were screened and tested for HIV (all negative) and forty men (median age 25.5, IQR 19.0-52.5) underwent the MC operation. Five men who had penile oil injections (a contemporary practice common throughout PNG) were excluded because of their abnormal penis and referred for hospital-based surgery. Half (N=20) the number of men operated had existing longitudinal foreskin cuts. Two minor complications (see details further down) were encountered, and both promptly and effectively managed. The average estimated cost per circumcision was USD33.33 and there was high community support. The following paragraphs provide further details of the incorporation of MMC within the 2015 manhood rite in Yangoru-Saussia, PNG.

7.5.1. Aligning the medical procedure with tradition

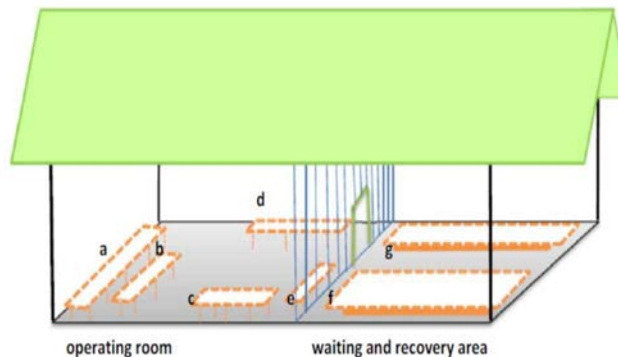
Local custom dictated two main obligations: the MC procedures were to occur on-site and the operators were to be men of local origin. In fulfilling the first obligation, a makeshift operating theatre (see Figure VII) was built (by the local people with supervision from ESPAC) within the ceremonial grounds of the most centrally located participating village. Initiates from the other four villages were transported to and from the makeshift clinical structure under cover of darkness. Night movement was needed to maintain the secrecy of operation as was the practice in the past. For the second obligation, three male health workers of local origin were identified and recruited from existing health

programs in East Sepik Province. The first author (CM), being of local origin and a registered PNG clinician, led the medical operation. The health team resided within the centrally located initiation enclosure and observed all ritual customs throughout the medical operation.

7.5.2. The clinical setting

The makeshift operating theatre had two sections: the front half comprised the client waiting and patient recovery areas; the rear half was the procedure room. The front section was open and had two low-set beds (**f** and **g**). The bottom half of the rear-section walls (including the middle partition) were covered with canvas whereas the top half was left open. This layout allowed for sufficient ventilation in the procedure room. However, flying insects also came through the top opening. The procedure room catered for two MC operations to take place concurrently. One team comprising an operator and his assistant were stationed at tables **a** and **b** while the other occupied tables **c** and **e**. Instrument sorting, sterilization and packing was done on table **d**.

Figure VII. The makeshift operating theatre



Left: photo showing front section of the makeshift operating theatre. Right: Diagram of the operating theatre
a = instrument and medication table 1, **b**= operating table 1, **c**=operating table 2, **d**=instrument and medication table 2, **e**=instrument and medication table 3, **f**=client recovery area, **g**= client waiting area

7.5.3. Hygiene and instrument sterilization

The MC procedures were done aseptically. Clean aprons and facemasks were worn by the operators, and sterile gloves, instruments, gauze and bandages were used. In addition, the field of operation on each client was washed with povidone iodine and the periphery covered with sterile drapes. Moreover, aseptic field of operations were maintained for all MC procedures.

Sterilization of the surgical instruments (there were six trays) occurred within the makeshift operating theatre. The used instruments were placed in a dish of soapy water and clean cloths used to wash them

thoroughly. They were then submerged and rinsed in clean water contained in another dish and placed in a mobile pressure-sterilizer. The sterilizer was positioned over an open fire and the water within boiled for 10 minutes. After sufficient cooling, the instruments were extracted aseptically and packed into surgical trays.

7.5.4. The circumcision procedure

The perineum, surrounding thighs, scrotum and the penile head (including the inner and outer foreskin surface) and shaft was washed down with povidone iodine and draped. The penile block anaesthetic procedure was done by infiltrating 5-10 millilitres of 1% plain lignocaine all around the base of the shaft. Once fully anesthetized, the WHO-recommended ‘dorsal-slit’ or ‘forceps-guided’ MC techniques were applied and the uncut or partially cut foreskin completely removed (with tissue scissors or scalpel blade) (50). Active bleeders were identified and ligated. The inferiorly retracted skin was then pulled up, aligned with the superiorly retracted skin and sutured (using 3-0 vycril stitch). The sutured wound was washed with povidone iodine and dried with a clean gauze. A short length of gauze soaked in a special wound-healing ceremonial fluid was placed around the closed wound before dressing applied. This fluid was extracted from the root of a traditional ginger plant. All clients were given six 500 milligram (mg) paracetamol tablets to be taken at 6-hourly intervals (2 tablets per dose) as required. The clients were also asked to keep their wounds clean and dry.

7.5.5. The circumcision techniques

The WHO-recommended ‘forceps-guided’ and ‘dorsal-slit’ MC techniques were each applied on 10 men (that is; ‘forceps-guided’=10, ‘dorsal-slit’ = 10). A form of forceps-guided technique was employed to fully circumcise the other 20 men who were partially circumcised with longitudinal foreskin cuts (see Figure II in section 1.4 of this thesis). The mean completion time for the 40 MC procedures was 29 (\pm 7 SD) minutes (SD=standard deviation). Detailed description of the techniques applied including comparison of ‘mean completion time’ is beyond the scope of this paper and will be provided in a separate publication.

In the semi-forceps-guided technique on men with existing longitudinal cuts, two artery forceps were used to elongate the flappy, remnant foreskin; two other forceps were placed at the base of the elongated skin (with their tips converging in the middle); and the distal foreskin segment excised with tissue scissors or scalpel blade. The mean completion time for this operation was 32 (\pm 8 SD) minutes.

In the forceps-guided technique on uncut men, two artery forceps were attached to the foreskin and pulled upwards and two guide-forceps clipped (to the foreskin) – one over the other – immediately above the glans penis. The skin between the forceps cut with scalpel blade and the distal segment removed. The mean completion time for this technique was 26 (\pm 4 SD) minutes.

In the dorsal-slit technique on uncut men, three artery forceps were attached at three equal-distanced points at the distal end of the foreskin and lifted; a longitudinal cut was made (with tissue scissors) beginning at the distal end and ending just beyond the penile corona; this straight cut was then extended bilaterally, and the foreskin excised. This technique took on average 27 (\pm 4 SD) minutes.

7.5.6. Surgery complications

There were two complications: one participant had blood-soaked dressing 20 minutes after surgery; another participant reported pain and swelling of the wound on the second day following surgery. The latter was managed with amoxicillin, one 500mg capsule taken at eight-hourly intervals; and paracetamol, two 500mg tablets taken at six-hourly intervals. The post-operative bleeding was rectified by applying gentle pressure and changing the dressing. Both complications were from men with existing longitudinal cuts (see Figure II in section 1.4 of this thesis).

7.5.7. Cost associated with the new program

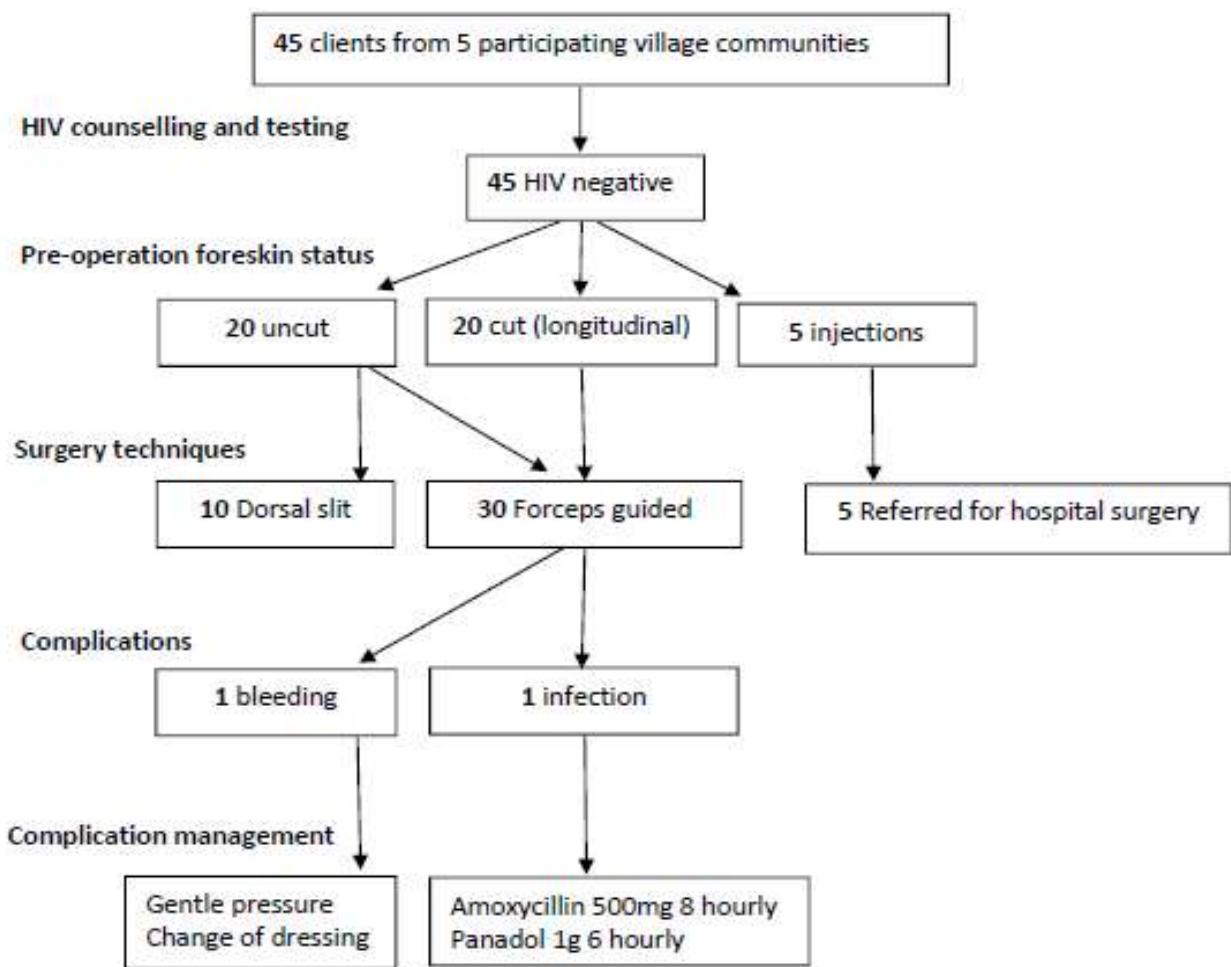
Overall, PGK50, 600.00 or USD15, 686.00 (PGK1.00 = USD0.31) was expended in the new HIV intervention. The medical operation cost PGK4, 300.00 and overhead costs or amount of money expended on the staging of the male initiation ceremony was PGK46, 300.00. Dividing the cost of medical operation (PGK4, 300.00) by the number of circumcision procedures performed, the average cost per circumcision comes to PGK107.50.

Of the medical operation cost, PGK3000.00 was paid to health workers as allowances. Transportation of participants from the four outlying villages cost PGK800.00 in total. Materials used to build the makeshift operating theatre were sourced from the forest at no cost, however, PGK500.00 was donated to a youth group that gathered the materials and constructed the makeshift operating theatre. Medical supplies including surgical instruments and HIV test kits were sourced from government supplies at no cost.

Of the overhead cost of PGK46, 300.00, PGK9, 000.00 was spent on event promotion including erection of billboards along the Sepik Highway. PGK15, 000.00 was provided to the five village

communities that participated (PGK3000.00 each) to subsidise the cost of labour (for culture experts) and food. Food subsidy was necessary as food gardens throughout the Yangoru-Saussia district were affected by the 2015 *El Nino* dry weather. A vehicle used for coordination and as a standby for emergencies was hired for PGK6, 500.00. A graduation and public display of traditional skills (see Figures X, XI and XII in section 8 of the thesis) learnt during the secluded ritual training cost PGK10, 300.00. PGK5, 500.00 was expended on a two-room semi-permanent sleeping quarters for the medical team.

Figure VIII. The MMC operation summary diagram



7.5.8. Community support

Community support for the new manhood rite was reflected in the financial contributions received. The entire initiation program was funded by individuals, local level governments and fundraising

activities that received sponsorship from the PNG National Cultural Commission, the PNG Department of Trade Commerce and Industry and local business organizations. PGK46,300.00 was raised for the program. Contributions from individuals including the local MP amounted to PGK22,400.00. Fundraising activities including a dinner presentation raised PGK17,550.00. Contributions from local level governments was PGK5,000.00. Money collected from participants' fees (K30.00 per participant) amounted to PGK1,350.00. All funds raised were expended in organizing and staging the 2015 male rite of passage ceremony as described under 'overhead costs' in section 7.5.8 of this thesis.

Community support for the said program is also seen from the dedication of people involved in the program. The lead organizers and most of other people involved in the program volunteered their time, expertise and other personal resources in implementing the new program. These people organized meetings, attended and contributed at fundraising events – including the dinner event at a hotel in Port Moresby city – and allocated land from which the cultural events took place.

7.6. Discussion

To our knowledge, this is the first research paper that reports on the feasibility of integrating MMC within traditional manhood rites for HIV prevention. The results demonstrate that incorporating MMC within manhood ceremonies in Yangoru-Saussia is culturally, clinically and economically feasible. The information presented are vital to implementing a comprehensive HIV prevention that is specific to the cultural context in Yangoru-Saussia. A way forward in blending culture and health to address HIV in traditionally-circumcising or penile-cutting communities in PNG and elsewhere is also presented.

Overall, the results show that it is feasible to incorporate MMC within traditional manhood rites in Yangoru-Saussia district of PNG. In the presented manhood ceremony, initiates underwent a foreskin cutting operation that was culturally sensitive and clinically safe. Customary requirements including health-worker observation of ritual taboos were fulfilled and the MC procedures performed in accordance with WHO guidelines. In addition, average cost per circumcision of USD 33.33 is expected to be reduced with procedural efficiency at future rites. The feasibility of this intervention in the study setting was also strengthened by the high-level community support evidenced in the financial and in-kind contributions that funded the presented traditional rite.

The shelter used as operating theatre served its purpose even though it was made from bush materials. It had the essential elements for efficiency of operation as outlined by WHO (45). There were beds,

tables, designated areas, and direction of patient movement, which allowed for smooth flow of operation from client preparation (including HIV counselling and testing) to patient recovery. However, several areas for improvements were identified. Enclosing the operating room with insect screen should be a high priority for future programs. In addition, the use of large canvas or tent shelters might be better than thatched structures and this option should be discussed with tribal leaders. Compared to traditional thatched structures, canvas or tent shelters would be easier to assemble and may provide an operating environment that is free of debris and dust. Furthermore, the use of portable beds, light kits and water dispensers may greatly improve the quality of service provided in this unique setting.

This medical operation fulfilled the WHO guidelines on MC procedures and techniques. Qualified and experienced medical personnel performed the procedures using standard clinical practice. The operators used sterilized instruments, the operative fields were kept hygienic, and the wounds closed (with sutures) and dressed aseptically. In addition, the patients were monitored, and complications managed promptly and effectively. Of the three WHO-recommended MC techniques, the Forceps-Guided Technique was applied on majority of the clients. The Dorsal-slit Technique was not applicable to the twenty men who already had a foreskin that was divided longitudinally. The Sleeve-resection Technique on the other hand was avoided as its' application would require more time (51). It was important to keep operation time to the barest minimum in this setting to prevent post-operative wound infection and to limit the time participants spent away from their respective village ritual enclosures.

The low rate of complication (at 5%) demonstrates that the MC procedures performed at the makeshift operating theatre was clinically safe. This positive clinical outcome could be attributed to health-worker skills in minimizing operational risks. The operators had many years of experience performing surgical procedures in rural health clinics in PNG. It is interesting to note that although the healing effect of the traditional fluid applied on the wound still remains to be proven clinically, it is a fluid locally known for its natural wound healing properties and has been used in traditional healing practice for many generations.

The ceremonial fluid applied appears not to have caused wound infection. Then again, non-reporting of minor post-operative complications can be expected in this setting. Initiates are unlikely to report minor complications if doing so undermines their determination of becoming a man. Future program

organizers should avoid the use of traditional ceremonial fluids unless the organizers are certain about the healing properties of substances applied and that the organizers are confident that substances applied will not increase the likelihood of wound infection. It is recommended though that established WHO guidelines on wound management is adhered to as much as possible in such settings. That said, it is pleasing to note that both complications reported in this instance were promptly and effectively managed by the medical team.

The average cost per circumcision of USD33.33 is not so different to the average costs reported from MC scale-up programs in Africa (52). In this program however, it is useful to note that the calculation excludes the cost of medical supplies, instruments and consumables. Adding the cost of these items may substantially increase the average cost per procedure. In addition, if the calculation were based on the overall cost of PGK50, 600.00, the average cost per circumcision would be PGK1, 265.00, although overhead cost ideally should not be included in this calculation.

The cost per circumcision could be reduced by improving procedural efficiency. An efficient operation could reduce the total cost by cutting back on the number of days of health worker involvement. One option to improve efficiency is to increase the number of surgical trays (from 6 to 20 for instance) so that the flow of surgery is not stalled by unobtainability of sterile surgical instruments. In addition, the total number of surgical trays required should be prepared beforehand so that the cumbersome process of instrument sterilization during the medical operation is avoided. A reduction in cost per circumcision may also be possible by hosting this new program on a regular basis. Maintaining regularity of the program could mean reduction of overhead costs, reduction in the amount of time operators spent per circumcision procedure (as their experience grows) and increase in the number of men circumcised (as the program becomes more popular), all of which could lead over costs being reduced so that cost per circumcision procedure is lowered.

Men with penile modifications including injections and foreskin cuts can be expected at future MMC-integrated manhood ceremonies in Yangoru-Saussia. Five men had penile injections and half the number of men operated had existing longitudinal foreskin cuts. The operation on men with existing cuts (using the forceps-guided technique) was slower (31.9 minutes) compared to men without cuts (26.0 minutes). This means that the overall medical operation will take longer if high numbers of men with longitudinal cuts are recruited at future rites. That said, surgery on men with penile injections

should be avoided as was done by the medical team in this study. The risk of excessive bleeding and wound infection is high for this group and they are best operated at fully equipped facilities.

The high-level community support with funding and in-kind contributions indicate that the new program could become self-sustaining. This potential was also highlighted in our earlier study wherein a prominent culture leader stated that local people were merely awaiting official authorization to begin staging the rites in their respective communities (7). The government or its development partners should boost this untapped public health potential by formulating appropriate policies and providing some funding support. Government support is particularly important in the initial stages to show local people that the revamped manhood rite is not violating administrative, religious or health regulations. Manhood rites in this setting were prohibited by colonial administrators and missionaries and many people in the area are still fearful of breaching this colonial decree despite the country gaining independence more than 40 years ago in 1975 (7).

Combining MMC with traditional manhood rites is a novel method for comprehensive HIV prevention developed by ESPAC (7, 8, 29). The new program is expected to contribute to HIV prevention in three ways: individual biological change with MC; individual behaviour change with HIV counselling and testing; and community socio-cultural change through the staging of revamped manhood rites. MC has been recommended by WHO/UNAIDS for HIV prevention following evidence from three randomized controlled trials in Africa, which showed that this surgical procedure prevented heterosexually acquired HIV in men by up to 60% (1-3). Likewise, HIV counselling and testing are well-established interventions for HIV prevention (53). The potential of traditional manhood rites for behaviour-change HIV prevention on the other hand, is still undergoing investigation. Overall, the revamped manhood rites are expected to revitalize the values embedded in tradition and provide a medium by which men can reflect on their sexual behaviour and make necessary adjustments in order to avoid getting infected with HIV (54, 55).

The extent of change to the traditional manhood rite in this study goes beyond those reported from Africa. In Africa, the manhood rites are largely unchanged: either the men are circumcised hygienically by trained traditional cutters within the ceremonial grounds or they are circumcised by health workers at medical clinics (11, 13, 16). In the presented manhood rite, the initiates are circumcised medically within the ritual enclosure and the cultural activities are modified to respond to contemporary needs.

The key in achieving desirable intervention outcomes with this level of change lies in being sensitive to local culture (7, 8).

Accommodating contemporary needs in the rapidly changing (from traditional to modern) cultural setting in Yangoru-Saussia requires delicate balancing between culture and health. On the one hand, the manhood rites – which are key mediums for transmitting important traditional skills and ensuring survival of indigenous culture – cannot be re-established without first addressing the risk-reduction health challenge. On the other hand, addressing participant safety will affect the significance and worth of the male initiation ceremonies. For the latter, much of ‘becoming a man’ or of ‘dying to childhood’ and ‘rebirthing into manhood’ through a process that involves high-risk penile cutting is lost (56). This penile-cutting operation was a contentious issue in the acceptability study conducted by our team (7). It is argued, however, that times are changing, and indigenous cultural practices must be adapted to ensure their survival (7, 57). In other words, undesirable or dangerous aspects are sacrificed or altered in order for previously ceased manhood rites to be re-established. There are of course, other ritual activities that could continue adding value to the new program. These include long periods of isolation, devoted observation of customary food restrictions, and ingestion of purging substances (7).

Involvement of older men as participants in the recent manhood ceremony is evidence of a pent-up demand for acquiring valued traditional skills. For instance, the traditional art of Garamut (slit-gong drum) communication is of high demand in this setting (7, 44). It appears that this group of men are non-initiated cultural leaders (since manhood rites were non-existent for many generations) going through the new rite to consolidate their traditional skills. There are only a handful of these non-initiated cultural leaders in Yangoru-Saussia and it is likely that younger men and adolescent boys will be the main group initiated at future manhood rites in this setting.

This new culture-oriented health intervention is an excellent example of a comprehensive approach to HIV prevention recommended by WHO/UNAIDS (6). The revamped manhood ceremony in this setting also fulfils a key national policy recommendation to reduce harm to men undergoing foreskin cutting at non-clinical settings in PNG (26). Furthermore, Pillar One of the PNG National Development Strategy (PNG Vision 2050) – which calls for the changing of the peoples’ mindset – was achieved with the traditional counselling and mentoring processes that occurred at the new manhood rite in Yangoru-Saussia (58). Moreover, social and epidemiological studies in PNG have consistently demonstrated that culture and context matter in HIV prevention in PNG (30, 59-62).

Key health workers committing time and service is critical to future MMC-incorporated manhood rites (8, 29, 63-65). In this study, three rural health workers in East Sepik Province and a teaching clinician at Divine Word University (Madang Province) were assembled by ESPAC to conduct the medical operation. It is not certain if these health workers would be available or willing to participate at future manhood rites in Yangoru-Saussia. It is also important to mention that not all male health workers of local origin may be willing to comply with restrictions required by custom in the ritual setting. Hence, the staging of future MMC-integrated manhood rites in Yangoru-Saussia should be done in close collaboration with ESPAC and its network of health workers.

This study is limited to the cultural context of Yangoru-Saussia. However, the concept about merging a traditional ritual with modern health practice for comprehensive HIV prevention could be applied in other traditional cultures provided that the local people accept the approach. It should also be noted that the possibility of researcher bias cannot be excluded. The lead researcher is a clinician who originates from the district of study. Being of local origin and having a medical background on the other hand, allows for locally informed data collection processes and balanced interpretation and reporting of the gathered data. Furthermore, this study is limited with unavailability of data on participants' post-initiation sexual practice. Future research should include a cohort study investigating 'condom use', 'number of sexual partners' and other indicators of HIV risk of participants following initiation into manhood. Moreover, the study is limited regarding precision of the complication rate. Although the complication rate of 5% is encouragingly low, the precision of the rate varies widely given the small sample size. Similar studies in the future with larger sample size could provide a rate of complication that is more definitive of the medical operations that occur within the seclusions of male initiation ceremonies in this setting.

7.7. Conclusion

This is the first formal research paper to report on the feasibility of integrating MMC within traditional manhood rites for HIV prevention. The results show that incorporating MMC within traditional manhood rites in Yangoru-Saussia is clinically and culturally feasible, although there are challenges in facilitation of such programs. The results also outline a way forward in blending culture and health for HIV prevention in traditionally-circumcising or penile-cutting communities in PNG and elsewhere. This new program is an excellent example of a comprehensive approach to HIV prevention recommended by WHO/UNAIDS. In addition, providing safe circumcision to men at manhood rites

fulfils a national priority agenda to reduce harm to men undergoing foreskin cutting at non-clinical settings in PNG.

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7.10. Authors' contributions

CM, DM, RM and JM designed the study. CM, MB and ET coordinated data collection. CM drafted the manuscript with inputs from all authors. All authors participated in data analysis and reviewed the final version of the manuscript prior to submission.

7.11. Declaration

The authors declare that there is no conflict of interest. The authors also declare that this article or any part of it has not previously been published nor has it been submitted elsewhere for publication.

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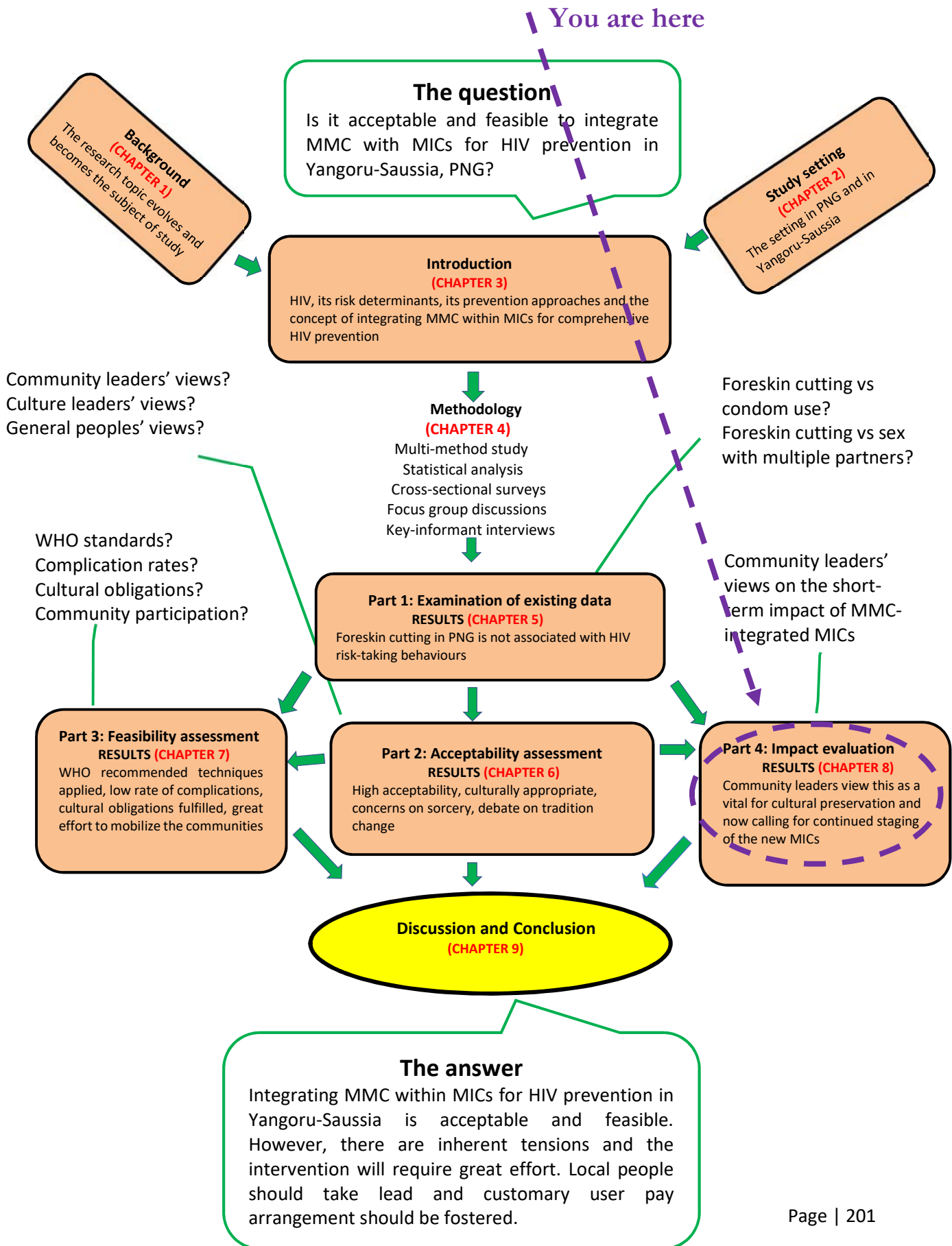
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Main points

- This chapter investigated the practical feasibility of integrating MMC within traditional manhood rites in Yangoru-Saussia.
- It was found that it was feasible to effect the said change; that the MMC operations in that setting were clinically safe and culturally appropriate
- There were limitations, however, with resourcing which could become a major hurdle for this intervention in the future.
- Local people should take lead in this intervention and the customary user-pay approach should be encouraged and applied.



8. Results: Study Part Four (Impact evaluation)

Summary

The previous chapter (7) showed that the integration of MMC within revived manhood rites in Yangoru-Saussia was practically feasible. The complications were similar to clinic-based complications and the integration of the modern procedure occurred in a culturally sensitive way. In this chapter, I will provide the results of the short-term impact evaluation that occurred in Part Four of this study. The new manhood rite had high positive impact on the initiates and participating communities. It increased initiates' cultural knowledge and skills, changed their mindset and improved the well-being of participating communities. The new rite also caused some hostility between village groups especially among churchgoers who were critical of the program thinking that unchristian practices such as black magic were to be revived.

Unlike the other results chapters, this chapter is not presented in journal article format. Rather, only the results are presented, preceded by a brief on the research method applied. The discussion of the results and conclusion are provided in chapter 9 (discussion chapter) where the results of all study parts (Part One, Two, Three and Four) are discussed.

Study Part Four aimed to assess the impact of the said intervention on individual initiates and participating communities. The research question was 'Has the new manhood rite had any impact on the initiates and their communities?' To answer that question, seven key-informant interviews were conducted 3 months following the new program. Study participants were identified and interviews conducted at four locations: Avawia, Maringei, Kumbuhun and Yangoru Station (please see map of Yangoru-Saussia in section 4.1). There were five male and two female respondents. Of these, five were local community leaders that led their respective communities in the new program, while two were elected representatives of the District Development Authority who were supportive of the new program. The interviews were voice-recorded and transcribed verbatim and following coding of the transcribed data, inductive reasoning was applied to pull the data into a cohesive storyline. The results are provided in the ensuing paragraphs. Data from field notes describing the graduation ceremony of the new program (kept by the researcher, CM) was also included in this impact assessment.

8.1. The impact of the new male initiation ceremonies was largely positive

On the whole, the community leaders interviewed reported that the effect of the new medical-circumcision-integrated male rite on individual participants and their respective communities was positive. At the individual level, a common positive effect identified by study participants was a change in the mindset of initiates. At the community level, the study participants indicated marked improvement in the behaviour of male youths with consequent improvement in law and order problems associated with homebrew consumption and smoking of marijuana. On the other hand, some community leaders reported that the new program also caused division and confrontations between some village groups. The ensuing paragraphs provide details of the impact of this new culture program on the initiates and the participating communities.

8.2. Change in initiates' mindset

Most community leaders interviewed reported that the new culture program had positively changed the initiates' mindset. A female community leader whose son participated in the program said that her son was a short-tempered person, but he has improved in this weakness after the initiation.

"I see my son as someone who is quick to get angry. But after the program, I find that some good thoughts came to him. For instance, he will think and weigh things out first, then he will talk about good things. This culture program has changed him" (Female_Avawia).

Similarly, another community leader reported that he was very happy about this culture program because it has changed the mindset of his son. He said that his son changed from someone who showed little interest in work to someone who is enthusiastic about work.

"I found out from my own son. He is not someone who shows interest in work. But now he could get up early and work in the garden from morning to evening. Ah, there is nothing that holds him back (from work). He just keeps working and working. That is my observation of the change that happened to my son. I am very happy about this culture program" (Male_Maringei).

The young men who went through the culture program are also said to have better understanding of what is being said and their speech at public gatherings have also become clearer and more fluent.

“I am seeing that the boys have picked up well in terms of understanding what is being said and are good in decision making. Even in older men too, I see that before the program, they were not clear in their statements when they talked. But now, I see that when he (ritual participant) talks, there is understanding. He talks, thinks and reasons in a way that is clear” (Male_KinieNumbohu).

The community leaders interviewed also provided the reason behind the change in mindset seen in initiates. It was explained that the change observed resulted from two activities that took place in the program: ingestion of special herbs sourced from the bush and the release of blood.

“So when the boys went through the culture program, they received some traditional things (herbs) which changed their minds and made them clearer. This will help them in terms of school and public speaking. In public speaking, their speech is going to be fluent and clearer so that other people can understand them better” (Male_Avawia).

“This is because when this bad blood is in you, you (men) will not have the motivation to achieve your goals. For instance, you (men) will not be motivated enough to get up early and go to the bush or to go to school even if that was what you planned to do. Other people will come and wake you and you will come down (from the house) and go. When you remove this blood, it is like nothing is holding you back now. If you want to get up early in the morning, you will just get up and go. That is true. Nothing will hold you back. Its this bad blood, if it stays in your body, it will make you feel weak and unmotivated” (Male_Maringei).

In addition, the release of maternal menstrual blood (through the MMC procedure) that is believed to remain in their body, was said to liberate men from lack of motivation and other factors that make men less productive. It is believed that during childhood, initiates come into contact with (and retain) maternal menstrual blood which was suppressing the abilities of men (more information on menstrual blood was provided in section 6 of this thesis). A female community leader reasoned that the initiated men were feeling better because they have released blood and freed themselves of feminizing effects of menstrual blood.

“Yes, I heard from some men who participated in that program that they appreciated this culture program because they are feeling lighter and much better in the body. This is because before this initiation, maybe he was under some suppressive effect when women jumped over him or gave him something (to eat) that came in contact with menstrual blood” (Female_Kumbuhun).

Furthermore, it was pointed out that this ability of the culture program to boost the mental strength of its participants could be useful in learning at school. A council president in the district suggested that young men should go through this culture program at some stage in their primary level education.

“In fact, this (male initiation program), changes the mindset of the young men and I would like to see that every one of our school children must go through this program before he (male child) progresses up in education. Perhaps he should go through the initiation as early as when he is in primary school or when he has reached the puberty stage and he sees that he is becoming an adult. Then he must go (through initiation) and then come out and continue in his education or come out and continue in his life” (Male_Yangoru Station)

8.3. Acquisition of valued traditional skills by initiates

Some community leaders expressed gratitude for the culture program because it has provided an opportunity for transmission of valued traditional skills from cultural leaders to young men. Community leaders reported that this opportunity has been inexistent for many generations and they are pleased that some of their sons have acquired key traditional skills and are able to participate in important ceremonial activities in the communities.

“I am seeing that, from this new culture program, the young men who participated picked up the garamut (slit-gong drum) communication very quickly. For example, there was a customary event in the village and my son (who participated in the new culture program) was invited to go and sit with the men and beat the garamut and this to me was very pleasing because I as his father, have yet to master this art, but my son has already learnt how to signal the bride-price ceremony using the garamut drums” (Male_Maringei).

“Ah, many of the boys did not know how to beat the garamut and the kundo (traditional hand drum). Now they are doing it out here in the villages” (Male_Avawia).

8.4. Reduced alcohol and drug related problems in communities

The community leaders interviewed stated the communities that participated in the new culture program have experienced a reduction in problems related to alcohol consumption and marijuana smoking. It was reported that some boys who took part in the program have completely ceased their bad habits of drinking the locally distilled high concentration alcohol or smoking marijuana and disrupting the peace in the communities. Some boys are continuing in this undesired practice, but they are somewhat more receptive when community leaders talk to them.

“When the young men returned from the ceremony, their mindset changed and the practices of drinking steam (locally distilled alcohol), smoking marijuana and misbehaving on the road is starting to go down. So it is also helping with law and order” (Male_Avawia)

“They changed, like they stopped some bad practices such as drinking steam and smoking drugs. This is because they received some good guidance (during the initiation process) on how to become a man and live well in the community” (Female_Avawia).

“There has been remarkable reduction in that respect (consumption of steam and smoking of marijuana). This was a continuous practice, which happens every week. But now I am seeing that this practice has declined substantially. Sometimes they do it when they are in the mood but when we (community leaders) talk to them, they listen and stop. They do not keep doing it” (Male_KinieNumbohu).

8.5. Prevented harm to ritual participants

Prevention of potential harm to initiates was another positive attribute of the new culture program highlighted by community leaders. It was stated that the involvement of health workers in this new program prevented harm to young men in two ways. Firstly, the community leaders pointed out that the high-risk traditional penile bleeding operation that used sharp objects like cassowary bone was avoided. Secondly, the interviewed participants indicated that the medical circumcision on the young men prevented them using sex-enhancing substances smuggled from across the Indonesian border.

“The boys could die if they use the cassowary bone since we are unable to know their blood levels. If someone has low blood levels and if that (operation using cassowary bone) happens, he (initiate) can die and disrepute the culture program. So it is better that health workers come in and oversee the safety of participants” (Male_Avawia)

“The boys are going to school and they are coming across many types of medicine. Like the medicine they are using on their bodies (penile injections) before they go around with women. This has seriously harmed many men in the province. It came out to the rural areas and is also practiced among those of us in the villages in the bush. That is why it is appropriate that the health workers are involved (in the new culture program) so they can check that and at the same time put a stop to this practice” (Male_Maringei).

The community leaders also expressed dissatisfaction at the reduced amount of blood loss that resulted from medical circumcision. It was emphasized that a good amount of blood needed to be removed from the body so that the body can make new blood and enhance the initiates' mental abilities.

“The boys must lose blood. Its bad blood. When you (initiate) have removed it, you stay in the ceremonial house and you are fed well, you eat meat and drink plenty of water, something like that, and you receive new blood. With health workers getting involved, the blood loss will not be enough and that does not sit well with me. The boys have to lose enough amount of blood” (Male_Avawia).

8.6. Instigated disharmony in participating communities

The community leaders reported that the new culture program instigated disharmony in the communities. According to community leaders, there was an expectation that a lot of money was to be expended and people would benefit without spending any resources of their own. This led to suspicions and ill feelings among the organizers and participants of the program.

“They complained about money and I told them that they have already given them some money. I also told them that if money was what they were after, then they should not participate in the program. We will not develop with that kind of mentality and we will not know our culture well. But if some money comes to us, they will give those money to the culture leaders who came at our invite to help with this work so that they (culture leaders) can be happy. They are talking at our back for this reason only” (Male_Miyerohombi).

The cultural leaders suggested that the participants and their supporters must be encouraged to pay for the service they receive through the culture program.

“One negative we should change is that the young men who come in (to the initiation program) want to get a free service. We have to encourage them to pay a fee and receive the service. They must make a contribution before they receive. They must not come and receive this service at no cost to them. That’s (initiation program) part of learning important things so they have to pay some fee to receive this good knowledge (and skills)” (Female_Avawia).

8.7. Caused hostility between program supporters and some churchgoers

Another negative effect of this new culture program was that it caused hostility between people who supported the program and some churchgoers. It was reported that many churchgoers perceived this program as a bad thing and accused the program organizers of practicing sorcery and witchcraft. It was also stated that some leaders of the new culture program who were themselves faithful churchgoers, were reprimanded and disciplined by their church leaders because of their involvement in the new culture program. Moreover, some churchgoers were against the new culture program

because of their view that bad spirits will be driven into the initiates when the initiators beat and inflict pain on the young men.

“The church people said that ah...we have gone into culture. And I said to them that we are getting involved just to train (people). We leave out things that are bad and teach those things that are good to the men and they will live well in the village and nothing will look bad. Ok, the other thing is that we were reprimanded and disciplined (by church leaders) and I did not agree and we had a big argument with some of them (laughs). I argued with the church leaders and I have not gone to church last week” (Male_Miyerohombi).

“In our case, we have gone through some hard time with some church goers. They are saying that we are practicing sorcery and witchcraft in this new culture program. So, we have received a lot of criticism and we have argued with them. That happened and there was a confrontation and we went down to the police station, but they did not turn up” (Male_Avawia).

“Many people believe that spirits are at work when they (initiators) beat and inflict pain on the young men at initiation ceremonies. So if we put the young men through the old practice of beating and inflicting pain, the people who go to church will disapprove of it. They will think that when the boys go through the initiation ceremony and go through the beating, they will put some kind of spirit in them” (Male_Yangoru Station).

The community leaders interviewed also provided suggestions on how to deal with the negative perceptions of some churchgoers regarding this new culture program. One community leader recommended that leaders of this culture program must draft and formalize some bylaws to protect the program organizers and participants. It was also suggested that the facilitators of the program conduct an awareness campaign throughout the district to clear the doubts people have on the new culture program. In addition, one community leader, who was a facilitator in the new culture program appealed to church leaders saying that they or other church members should not judge him. Instead, they (church) should let God be the judge because he was only teaching the good parts of culture.

“I would like to see that the organizers set some bylaws for this culture program so that those of us taking lead in participating communities can take legal action on anyone in the village who have issues (with this culture program). For instance, we could use these bylaws to defend us against people who accuse us of practicing sorcery and witchcraft. In addition, others too can see (these bylaws) and say that this program has its laws and the government is aware of this work. That it (this program) did not just materialize in the village” (Male_Avawia).

“I think the organizers of this program must come and we go around and do some awareness in the villages of Numbo and Sausse so the people can be informed before we run the program again with the next intake. Then it will be better” (Male_Avawia).

“That is why I am saying that it is an unjust act on your (accusers) part if you judge me. You people must not judge me, only God will judge me. This is because I am teaching young people about the good parts of culture; garamut (slit-gong drum communication), living in harmony, having a clear mind, I give herbs and open this mind up, and God knows that” (Male_Miyerohombi).

8.8. Generated high demand for program continuation

According to the community leaders, there was high demand in the communities for this new culture program to be continued. This high demand was generated when the new culture program was staged successfully in December of 2015. The community leaders in this study expressed that many people had doubts on this program partly because they did not know the reason behind it. However, the doubts these people had have now been cleared after they witnessed the successful completion of the program. Likewise, some community leaders expressed support for this program to be continued because they have witnessed for themselves the benefit this program has done to their sons and they would like other young men in the communities to benefit from the program. It was also expressed that some young men are regretting that they did not participate in that program. These young men are said to be among the many people who are now looking forward to participating in the next male initiation event in Yangoru-Saussia.

“I would very much like to see this program continue in the future. There has been a lot of interest among the people after they have witnessed the first program. That’s why we still have to run the program so that our children can go. Some in-school boys who did not participate are now regretting that they did not give their name and participate in the first program. So they are preparing themselves now so that they can take part next year. Many people will want to take part in this program in the coming years” (Male_Yangoru Station).

“At first I thought this program was not going to benefit my son. But later on, I observed and saw that this program was good. I have seen (the change) in my own son. That is why I support this program and would like other young men to go in and participate” (Male_Maringei).

“It can be seen that the boys who did not participate in the initiation program feel that they have missed out. Those who have not participated are seeing that the behaviour of the boys who took part (in the program) are starting to change

gradually. So those who missed out would like this program to be staged again so that they can participate” (Female_Kumbuhun).

Some community leaders also stated that the new culture program needed to be continued so that the skills learnt by initiates in the last program do not fade away. These skills should be put into use if they were to be maintained. Hence, there was a suggestion that participants of the last program will go to the second level of training in the next program while new participants will start on first level training.

“If they (young men) say they want to learn (about traditional skills), they can come and they will go to the lower grade. And those who have already learnt, we will test them and put them up to Grade 2 or something like that. The second stage is where they (young male initiates) will master it. They have to be familiar with those things that are difficult to grasp quickly” (Male_Miyerohombi).

8.9. Leaders and members of the public inspired by the prospects of preserving valued traditional practices through the new culture program

The cultural, administrative and political leaders of the district and a large number of people were inspired by the prospect of preserving valued traditional practices when they witnessed the participants of the new culture program demonstrating the learnt traditional skills on graduation day. This graduation and public display of traditional skills took place on the 23rd of December 2015 at Maringei, along the Sepik Highway.

The graduation for the initiation ceremonies (or culture schools) were combined in order to save costs and to have the public and interested individuals witness the results of the culture program. Local PMV trucks were engaged transport provided on the day. All initiation participants together with their teachers, cultural leaders and interested members of their communities gathered at the graduation venue (Rhulimbo). At Rhulimbo, each hausman (or culture schools) had designated locations within the ritual seclusion from which to prepare themselves for the public display. The graduation arena had a beautifully decorated stage and next to it was a similarly decorated hut that contained four garamut drums. The demonstration of public speaking and traditional dance and singing happened in front of the stage where the official guests were seated. Guest invited for the occasion included the local MP and the four LLG Presidents. However, it was Christmas eve and many invited guests were not able to attend. The local MP provided his apology and the Chief

Executive Officer of Yangoru-Saussia District Development Authority (DDA) attended in his stead. The principal of Yangoru-Secondary School was the master of ceremony. Guests who attended included President East Yangoru LLG, Deputy President West Yangoru LLG, Representative of Numbo LLG, a prominent National Human Rights Lawyer – Mr Patrick Harricknen and Mr Emil Trowalle (Coordinator – East Sepik Provincial AIDS Committee).

The ceremony started with a traditional welcome rendered by the host hausman –Rhulimbo. The guest speakers spoke highly of the local culture and the values by which local cultural practices can help to mitigate some of today’s social and health challenges. The guests and the crowd were entertained by the public demonstration of the learnt cultural skills. During his speech, the CEO of Yangoru-Saussia DDA assured the program organizers and the public about the local MP’s support and the support of Yangoru-Saussia DDA. He further re-enforced the local MP’s support and invited the program organizers to make a submission to the District Development Authority early in 2016 so the district can allocate an amount to this culture program in its 2016 budget.

Among the cultural demonstrations, the public was particularly impressed by the garamut communication. Young men were able to accurately communicate messages by beating rhythmic patterns as instructed by the garamut experts. People were also amazed by the ability of selected young men who demonstrated their public speaking skill. The graduation ceremony ended with a traditional farewell beat of the garamut drums. The opening and closing prayers were offered by a senior pastor of the Seventh Day Adventist Church. Official certificates of recognitions were to be issued after monitoring the participants over a 6-month period to ensure that they (participants) adhered to the statutes of the initiation ceremonies and to ascertain there is continued practice of the learnt cultural skills in the communities.

The public demonstration and support from community leaders helps to show the local people that cultural training and skilling of the young men in the district is possible through the new program. It assists the people to see that despite the changes made to tradition, the young men who spent four weeks in seclusion in the new program have acquired the cultural knowledge and skills that people value in this setting. It may also aid in setting aside fears among the people that the rite is associated with unchristian and outlawed activities, when in fact, the activities were harmless but rewarding to the participants including the cultural leaders who led the ceremony.

Figure IX. A local level government representative presents a cheque of K1000.00 to program organisers to support continued staging of the new culture program.



Figure X. The public witnessing ceremony participants demonstrating the traditional garamut (slit-gong drum) communication skill.



Figure XI. A participant (right) demonstrating the traditional public speaking skill referred to as 'Paiye-Nangri' in the company of his mentor (left).

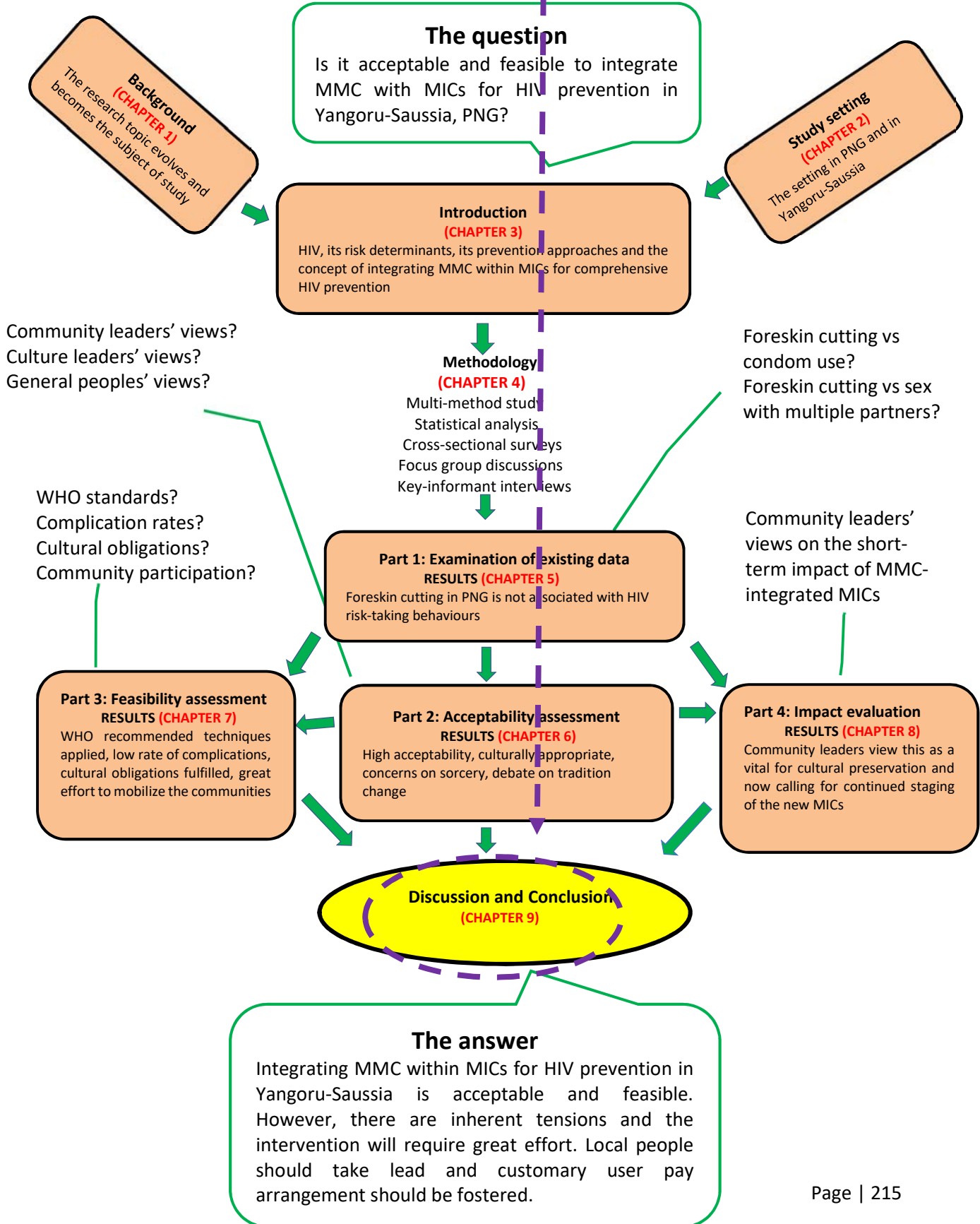


The public display and the support among leaders and the people who gathered there also helps to show that the local people see value in the new male ritual, vanquishing earlier fears that it would be taken as a worthless activity without cultural significance. In addition, it helps outsiders, program managers and potential partner organizations to understand that, this new program is something that the local people critically need to improve their livelihoods but which the 'how' question 'to establish and run the new program' remains uncertain, especially without the existence of an official policy that stipulates clearly what the new rite entails.

Main points

- The impact of the new manhood rite was assessed
- The initiates were changed behaviourally and their cultural knowledge and skills were significantly improved
- Participating communities experienced improvement in youth behaviour.
- The program also caused rifts between participating groups and church-going village groups especially among churchgoers who were critical thinking that unchristian practices such as black magic were going to be revived.
- Community leaders seeing this positive impact are calling for continued staging of the new rite.

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9. Discussion and Conclusion

Summary

The previous four chapters (5, 6, 7 and 8) provided the results of the study. Chapter 5 showed that foreskin cutting was not associated with sexual risk behaviours; chapter 6 showed that integrating MMC within revived MICs was acceptable but there were dilemmas especially on how to balance cultural significance and bio-medical risks; chapter 7 showed that it was practically feasible to provide MMC within MICs; and chapter 8 showed that the short-term impact of the new MICs (that included MMC) was largely positive. In this chapter, I will discuss the results of the study in chronological order from results of Study Part One to Study Part Four. This is followed by a discussion of the study results in relation to the overarching research question of whether it is feasible to integrate MMC within revived MICs for HIV prevention in Yangoru-Saussia. At that juncture, I will highlight the bio-medical, cultural and logistical challenges related to the said intervention and introduce the 'Hwelembo model' as a way forward for the said intervention in Yangoru-Saussia and other traditionally-circumcising communities.

Where are the boundaries? Where do we draw the lines when balancing cultural significance and bio-medical risks at the backdrop of modernization in a culture-oriented HIV intervention? Do we erase the lines of segregation between tradition and medicine in this intervention? These questions are explored in the paragraphs that follow. Foremost, however, the results of Study Part One that investigated the association between foreskin cutting and sexual risk behaviours (sex without condom and sex with multiple female partners) are discussed. This is because prevention of harm including of HIV acquisition is non-negotiable in medical practice. Thus, the odds of foreskin cutting being linked to sexual risk behaviours among men in PNG was assessed prior to considering the main research question.

9.1. Study Part One (Examination of existing data): Foreskin cutting was not associated with sexual risk behaviours

The results in Study Part One indicated that foreskin cutting in PNG was not associated with sexual risk behaviours. This meant that the occurrence of sexual risk behaviours among men in PNG were

unlikely to be affected by a future MC program. Thus, a MC roll out program that includes dispensing of sexual health information should be considered for HIV prevention at selected locations in PNG.

Although MC is an effective and well-established bio-medical intervention against HIV, it does not fully protect men against the transfer of virus from infected female partners during vaginal intercourse (1). The efficacy at population level is only about 60%, which means that circumcised men increasing their sexual risk behaviours could actually be more vulnerable to HIV acquisition compared to when not circumcised. Thus, it was vital that the relationship between foreskin cutting and sexual risk behaviours was assessed prior to proceeding with the new program in this study where young men are circumcised medically.

There was no information on sexual risk behaviour among circumcised men in PNG. In Africa, on the other hand, sexual risk behaviour appeared comparable between circumcised and non-circumcised groups of men studied (2-6). Would an intervention that involved male circumcision have an effect on sexual risk behaviour among men in PNG? It was important to have an answer to this question because it would have been unethical to proceed with the intervention under study knowing that the said intervention could place men at increased risk of acquiring HIV in the study setting. In addition, the researcher (CM) being a medical officer was under oath of non-maleficence which means non-harming or the inflicting of the barest minimum harm to achieve cure of disease conditions or health for individuals and communities (7). In other words, it would have been unethical to continue with the new intervention if foreskin cutting was associated with increased sexual risk behaviour.

It also appeared in Part One of this study that the occurrence of sexual risk behaviours ('sex without condom' and 'sex with multiple partners') was high in both foreskin cut and foreskin uncut men. This meant that men having their foreskin removed still face a substantial amount of risk of HIV infection, not from sexual risk compensation following MC but from their existing attitudes towards sex and sexual relationships. This finding also indicated that MC programs that are devoid of safe sex education are unlikely to be useful in the fight against HIV in PNG. To cater for these behavioural risks to HIV infection, the World Health Organization and United Nations Program on AIDS (WHO/UNAIDS) recommend providing MC in combination with other behaviour-change programs rather than as stand-alone interventions (1). Thus, for this study, it was paramount that counselling on sexual health and importance of condom use were included in the new program.

With the knowledge that sexual risk behaviours among men had little or nothing to do with foreskin cutting or male circumcision, and that behaviour change interventions are integral part of any MC program in PNG, the study proceeded to Parts Two, Three and Four where the acceptability, practical feasibility and short-term impact of the new intervention were assessed respectively.

9.2. Study Part Two (Acceptability assessment): Integrating medical male circumcision within traditional male initiation ceremonies was highly acceptable, although there were tensions and dilemmas

Majority of the respondents in Study Part Two supported the proposition to integrate MMC within MICs and to establish a modified form of the rites for HIV prevention in Yangoru-Saussia. However, the respondents in this study also brought up important issues that need to be outlined and examined in detail. In the ensuing paragraphs, I will explain the basis of this high acceptability (of the stated intervention) and deliberate on the issues raised and the tensions that exists.

9.2.1. Majority of the people in Yangoru-Saussia supported integrating medical male circumcision within male initiation ceremonies and re-establishing a modified form of the rite for HIV prevention

The high support among the study population to integrate MMC within MICs and to revive those rites for HIV prevention suggest that this new culture-oriented health intervention will be supported in the local communities. It means that most people in the district will be happy to see a revival of the previously ceased MICs. It also means that the people in general are supportive of the stated plan to make the traditional ceremony safer by providing MMC in place of traditional penile-cutting operations, although there were conflicting interests and dilemmas.

The high support for re-establishing MICs among the study population was expected given that people in this setting had pre-existing ideas about how life was better in the past when initiation ceremonies existed and men received guidance, discipline and skills required for individual health and community well-being (8). These ideas were evident in the suggestions made to East Sepik Provincial AIDS Committee (who were responsible for HIV prevention programs in East Sepik Province including Yangoru-Saussia), about local ways that can better address HIV compared to mere awareness campaigns and distribution of condoms. People in Yangoru-Saussia, through the study titled ‘Traditional best practice for HIV prevention study’ stated that MICs were the traditional practices that could be utilized for HIV prevention in the study setting (8) (see appendix IV).

However, was life really better in the past? In addition, what was it about life in the past that makes community leaders and people in general in this study say that it was better? Some aspects, (if not most) of life in the present are far better than the past. Take health for instance; many people in the past were dying of illnesses that today could be treated easily with medications or prevented using vaccines. What they could be referring to perhaps is the level of inappropriate behaviour: of disrespect, uncivility and violence that is most obvious today especially among male youths in the communities in Yangoru-Saussia. In the past, there could have been more respect between people and life in the village communities might have been reasonably more peaceful and harmonious. And much of this peace, order and harmony was attributed to the effect of the MICs. The MICs in Yangoru-Saussia were said to instill discipline and strength of character to the men through a process that involved long periods of sacrifice and extremely risky penile-cutting or penile bloodletting operations (9).

Thus, the high support given by the respondents in this study is not just about HIV prevention, rather, it goes beyond that to look at the behaviours of male youths and why communities in the study setting have become increasingly unsafe and disharmonious. In fact, the responses people gave in this study had little to do with HIV prevention. They were talking more about culture and the need to bring back and or maintain the best practices going forward into the future. People could thus be saying that HIV is best prevented by addressing the factors that influence sexual health in general – such as sociocultural or economic conditions that affect health (also referred to as the social determinants of health) (10-12) – rather than simply carrying out awareness campaigns and condom distribution programs. In other words, the people in this study were uncovering the mask of HIV and pointing the service providers (ESPAC) to the social determinants of health as the real face of the problem in the study setting.

It is possible then that the people supported the idea of replacing traditional penile-cutting with MMC not only for HIV prevention but also for revival of a tradition that in their view can instill a positive HIV-preventive influence on young men in Yangoru-Saussia. As mentioned earlier, there was no mention of HIV prevention in the responses given by study participants. All the conversation was about men gaining strength of character, of discipline, respect and of becoming responsible persons in the communities. This reinforces the view that it is not just about HIV prevention, it is about sexual health in general and the factors that influence people in making their choices about sex and sexual relationships. In other words, it is about culture and its decline and the inability of the modern establishments such as health, education, law and order and the churches to sustain a high level of

influence on sex-related decisions especially among male youths in Yangoru-Saussia. It could also be about the inability of people particularly the male youths to get a hold of themselves amidst the changes brought about by modernization including consumption of alcohol and illicit drugs (13).

It follows then that people were agreeing to the suggestion of substituting traditional penile-cutting with MMC not because the change was appropriate but because it was necessary. This is because without that change, it seemed impossible to revive the MICs, since prevention of harm and death from traditional penile-cutting operations was one of the major reasons for the banning of the MICs by colonial administrators (8, 9). Where then does health and prevention of harm fit in this picture, especially in the rapidly shifting (from traditional to modern) cultural contexts in communities in Yangoru-Saussia where people are more mindful and often critical of unsafe traditional practices? Is MMC a genuine substitute of traditional penile-cutting operations?

However, the operation on the male sexual organ is not an entirely new concept in the study setting. Stories of men undergoing initiation and receiving strength of character and mind through penile operations (and other ritual activities) are still being told in Yangoru-Saussia by initiated men and sons of initiated men alike as demonstrated by the responses received from cultural leaders in this study (8,9). In addition, evidence from large multi-site studies show that many men in PNG (including in the study setting) are undergoing foreskin cutting – although most of these penile operations are occurring outside of health settings – and knowledge of this practice and acceptability of it is expected to be high in the communities (14-18).

An important consideration about this finding of high support for the stated changes is the possibility of people in the communities participating fully in the new program and generating positive outcomes for HIV prevention and cultural preservation in this setting. This high support could translate to communities taking ownership of the program given that the program is something that the local people want as opposed to something that is imposed upon them, as is the case in most health programs in PNG (19-21). It goes then that if people take ownership of the program, many of the issues surrounding resourcing of this project could be addressed locally. For instance, local people can contribute labor in setting up the physical structures of the new MICs. Community ownership and self-resourcing is crucial in PNG given that the country is still struggling to adequately equip its service delivery systems and new programs such as MICs may not be supported financially by government organizations (18, 22). In addition, communities participating and taking action for health – according

to Brown et al (1991) – could itself be a powerful factor in influencing health-promoting behaviours in the communities (23).

9.2.2. The substitution of traditional penile-cutting with medical male circumcision was fervently contested

Some participants in the acceptability study, particularly cultural leaders, fervently contested the proposition to substitute traditional penile-cutting with MMC. This suggests that key people in this discourse (the cultural leaders) are not convinced that MMC is the best substitute for traditional penile-cutting operations. Although the two operations (traditional cut and medical cut) share some similarities, the actual procedures are quite different. Of special note is the fact that traditional penile-cutting is a deliberate act of subjecting the initiate to harm or of excruciating pain and substantial blood loss– which are symbolic of severing maternal ties and becoming independent adult men – whereas MMC is essentially painless and bloodless, although it is also a deliberate act of reducing risks of HIV (and other STIs) to initiates. In addition, MMC procedures use sterile surgical instruments (that have no cultural significance) to cut the skin and expose the glans penis while the traditional procedures use cassowary bone daggers (in most cases) that have been passed down from generation to generation, to split open the glans penis and the accompanying foreskin (24).

So how do we move forward in this initiative? How do we balance culture and biomedicine? Alternatively, is balancing the right thing to do, is it appropriate? Moreover, who is it that decides on these dilemmas? These questions are bound to arise because balancing is not easy, if not impossible given that it is where two distinct spheres of practice – tradition and biomedicine – encroach onto each other. Tradition has its own set of boundaries for practice. Likewise, biomedicine has strict guidelines that must be followed. Perhaps, the merger between these spheres of practice warrants dialogue between cultural and bio-medical leaders in negotiating a practice that suits and benefits both parties. In the case of the new program, the cultural leader is left wanting because the most significant aspect of the male ritual, where initiates are deliberately subjected to harm of pain and bleeding, has been abandoned.

To reach a common ground in this dilemma, some cultural leaders suggested cutting the glans penis with the pointy end of a new razor blade after they are circumcised medically. Here than is a suggestion that could provide a leeway for the cultural leaders to maintain some worth of the male tradition even though it has been modified substantially. Where then does this leave the bio-medical experts? Perhaps

this is the point in the mix that the bio-medical experts takes a step back and prepare for emergencies that may arise from the suggested penile pricking procedures. What is helpful though for the health leaders is that the suggested procedure may not be as risky as it sounds; that it may involve less pain and bleeding compared to the penile cutting procedures of the past (9). Thus, if penile pricking with razor blades is allowed at future rites, program facilitators should plan for any adverse events that may arise including having emergency protocols in place and of having the resources ready to implement those protocols.

9.2.3. Reviving of black magic and unchristian practices were not wanted

Some respondents were concerned that black magic and honoring of ancestral spirits were to be revived and or strengthened. This indicates that the new program may be rejected in some communities if people perceive that black magic and worship of ancestral spirits would resurface with the revival of male initiation, a ceremony said to be associated with casting of spells and summoning of ancestral spirits (9). It may be helpful to know at this stage that unchristian practices such as sorcery, witchcraft and honoring of ancestral spirits was a key reason for the banning of the MICs in Yangoru-Saussia (9). Thus it is understandable that many people in the study setting, being converted Christians, are unlikely to support practices that go against their newfound beliefs. This means the new manhood rite has to be free of these unchristian practices. Majority of the people in Yangoru-Saussia identify as Christians and it is important that this concern regarding black magic and other unchristian practices is not overlooked (8).

Here then is the point in the merger between tradition and biomedicine that religion comes in. Christian churches have a long and very influential history in PNG including Yangoru-Saussia (25). It should be noted that it was the early Christian missionaries who gathered the tribes and instilled some sort of control over their native ways before the set-up of colonial administrations (25). In addition, today there are probably more church set-ups providing essentially education and health services especially in rural areas in PNG and in Yangoru-Saussia than government establishments. Thus, it is crucial in this discourse that conflicts with the Christian beliefs are avoided. This means, however, that the new MICs will have to shed few more of the activities that occurred at past rites. The cultural leader will again be concerned here because the rite that once was a powerful force of influence on people's behaviour (through its magic-related activities), could be reduced to an event incapable of influencing change on initiates and on the well-being of communities. Can some form of consensus be reached in this entanglement?

Perhaps the Christian church leaders could make allowances for the cultural leaders to include the 'haus tambaran' or 'spirit house' visits in the new program. This is because the haus tambaran practice may not actually be associated with magic, although that may seem to be the case, at least to the unknowing outsider. It is clear, however, that the activities involved with this practice are designed to generate fear and reverence (and which may wrongly be perceived as magic) among the initiates and the general public (see Appendix II). At the height of this activity, the initiates are taken into the 'haus tambaran' – a standalone, cone-shaped structure – and shown wooden figures or statues of important forefathers of the tribes and the tribal genealogy is explained to the young men (26) (see Appendix II). This is actually a vital aspect of the male initiation at which the identities of the initiates are made explicit and a sense of belonging to the tribal whole is instilled (26).

A discussion on this issue of 'haus tambaran visits' between cultural leaders, church leaders and community leaders could perhaps lead to greater understanding and flexibility in regard to whether or not this activity can be included in the new male ritual. This is because what was perceived by early Christian missionaries as cult or pagan practices were nothing more than the local peoples' way of instilling a sense of identity and belonging to the young men in the communities. Realizing this misunderstanding among the early visitors and the need especially in the era of modernization, to maintain local cultural and genealogical identities, the villagers at Belmore – most of whom are Christians and predominantly Catholics – built a haus tambaran which was officially opened by the local MP (who is also a dedicated Christian of the Seventh-Day Adventist faith) in 2015 (26). The guests in that opening ceremony (including CM, the researcher) entered the ceremony house and were shown the wooden figures of the ancestors of the tribe. These carved ancestral figures were placed in the furthest and darkest corner of the elaborately decorated house.

In addition, the people of Belmore (through their leaders) reasoned that the sense of belonging among young people today was declining as evidenced in the rise in social problems in the communities, thus the need to reenact the haus tambaran practice. Furthermore, the local people at Belmore during the opening ceremony changed the name of that cultural practice (in their village community that is) from haus tambaran to 'Kwarambu', citing the misunderstanding associated with the name 'haus tambaran' (26). 'Haus tambaran' in the Tok-Pisin local vernacular is taken to mean 'house of the spirits', and the word 'spirit' usually denotes 'bad' spirits rather than 'good' spirits. Thus, there is room for the church leader, cultural leader and community leader to get together to discuss and negotiate a path through this entanglement of re-establishing the MICs in Yangoru-Saussia.

It should be noted at this stage that the value systems existing today in Yangoru-Saussia could be weak or are in decline as evidenced by the rising law and order problems, increasing cases of violence and growing occurrence of youths getting out of hand under the influence of alcohol and marijuana (13, 8). Thus, the influence of the Christian churches might not be as strong as it used to be. In addition, government services such as education, health, law and order and justice are struggling to maintain their services. Furthermore, the once rich and diverse range of customary practices have dwindled to few ceremonies such as bride-price payments that are becoming increasingly dependent on accumulation of modern money (27). The decline of customary practices also indicates that the meaning and value associated with the traditional social structures of the past are no longer as deep and as influential on people's behaviour as it used to be in the days of old. Thus the value strings that attach individuals to some sort of understanding and order in the communities has become feeble in the rapid shift of culture from traditional to modern in this setting. During this cultural transition, the mixing of practices and beliefs may result in people having diverging views on 'acceptable' and 'unacceptable' behaviours or actions. This then leads to conflicts and persistence of tensions between individuals and family groups in the communities.

Thus, there is need to strengthen all the value systems in the district including church programs, government services and cultural practices. In this project, a cultural activity that was once a very powerful force of positive influence on men's behaviour is being revived. Relevant authorities including the Yangoru-Saussia District Development Authority (which oversees all developments in the district of study) are therefore encouraged to support this initiative. Support to this initiative could include public endorsement of the program, policy formulation and allocation of officers within the district administration to oversee the staging of the new rites. It is argued that life is not just about money and the accumulation of wealth as is portrayed by introduced ideologies, at least not for the people of Yangoru-Saussia. Rather, life and the well-being of it is about balancing material wealth and individual or societal values. Thus, authorities are encouraged to support the activities and programs – whether related to generation of wealth or not – that increases the value people have of themselves as individuals.

9.2.4. Cultural leaders are expecting government funding and support

Some cultural leaders are expecting the government to fund and lead the new cultural program in the district. This finding brings to light the tendency of people in the district (and elsewhere in PNG) to run to the government and its agencies for assistance, rather than to look within themselves and their

communities. It is an attitude that has emerged in the cultural shift wherein people in this setting have come to believe that it is better to follow rather than to lead; that there are experts out there and people with money that can do a better job at leading this new program than local experts and cultural leaders. Thus, although the cultural leaders have most of the required resources, they may not actually start the program until they are confident that financial and resource support from government or its development partners would be forthcoming.

However, it is clear that the government at all levels, is struggling even to maintain basic services such as health and education and it is highly unlikely that new cultural programs will be prioritized for funding or for assistance with resources such as health workers (18, 22, 28). It may not be beneficial thus to wait on the government, although development partners such as AID agencies could provide some funding support, at least to help motivate the cultural leaders to take on the task of reviving a practice that has been ceased by colonial administrators. Funding support may also be helpful in this scenario given that local cultural leaders may be mindful of the fact that the male traditional rite was banned and that support from external partners could prove to them that they (cultural leaders) are not violating any laws in staging the new male rite.

In addition, it may be helpful to remind the cultural leaders and people in general in the communities that the MICs in the past were not sponsored or led by outsiders or people and groups of other cultures. Rather, these ceremonies were organized by the local people including the participants and their leaders using their own resources. Initiates of past rites were required by custom to pay for the initiation service with traditional shell money. That approach could be adopted today and the users (initiates) and their supporters including parents and relatives asked to meet the cost involved. On the same note, cultural leaders in the communities must take lead given that they are the experts of the cultural practice being revived and not outsiders, irrespective of whatever qualifications outsiders have. On the other hand, cultural leaders organizing the programs could seek guidance from event-organizing professionals in order to ensure that the staging of the rites are successful.

9.2.5. The new male initiation ceremonies will impact boys' attendance at school

It also appeared in the acceptability assessment that the new cultural program will affect boys' attendance at schools in the district. The young men participating in the new MICs may skip some classes at school if the timing of ritual activities collide with school schedules. Should this happen, teachers, parents, guardians and sponsors of the young school-going boys will enter into this dilemma

of re-establishing the MICs in the study district. The teachers may want to know if this traditional activity is worth the students' absence from class. Likewise, the parents, guardians and sponsors would question if it was worth their investment in time, effort and money for their male children to sacrifice some classroom lessons to go through the new initiation ritual.

The questions parents and guardians have are important because the livelihood and perception of progress and prosperity has shifted from subsistence living and a life centered around traditional exchange ceremonies, to capital-driven lives of buying and selling and of attaining wealth and higher standards of living through education. Thus, parents and supporters of young men in the district may be unwilling for their school-going boys to participate in the new rite if the ritual activities interfere with the boys' attendance at school. It is advisable then that the new MICs should as much as possible be staged during school holidays.

Here then is where the teachers and school administrators in the district are consulted. If the new ritual should steer away from affecting boys' attendance at school, then the activities should occur during holiday periods, particularly the 6-week holiday at the end of the year. It should be noted, however, that past initiation ceremonies (the first stage of the rite that is) took between 3-6 months (or 12-24 weeks), which means that the six weeks at the end of the school calendar is largely insufficient. On the other hand, it may be helpful to consider that past ceremonies were held in stages in accordance with the maturing of the initiates (in terms of age, marital status etc.) and that a similar initiation-in-stages can be adopted in the new program. The first or major stage of the rite could take place in the six-week holiday period at the end of the fourth and final term of school (of each year) and the other stages could occur at other school-holiday periods such as the first-term break. It is helpful to note too that the modifications to the rite including the exclusion of unwanted activities may actually result in a shorter-program that fits well with the modern education calendar in the district.

9.3. Study Part Three (Practical feasibility assessment): Integrating medical male circumcision within traditional male initiation ceremonies was practically feasible

It was found in Part Three of the study that integration of MMC within traditional MICs was practically feasible. The rate and type of adverse events resulting from MMC operation was negligible and the inclusion of the medical operation within the rite was culturally sensitive. However, like all

new programs, there were challenges and debates that need to be weighed in the balance between tradition and medical practice. In the paragraphs that follow, I will discuss these findings and highlight the cultural and bio-medical tensions that exists in the new initiation program.

9.3.1. The rate and type of complications from the medical operation were negligible

The rate and type of complications from the medical operation in the new male ritual was negligible. This means that serious complications arising from MMC operations at future rites in this setting are unlikely. Health workers should take note that to achieve the results shown in this study (of negligible complication rates), the MMC operations will have to follow the steps utilized in the inaugural program. That, although this operation occurred at a makeshift shelter within a traditional ritual seclusion, WHO recommended surgical and hygiene practices were followed. It is pointed out on the other hand that the use of antibiotics as prophylaxis against wound infection is avoided. Instead, antibiotics should be reserved and supplied only to clients whose wounds have become infected. Antibiotics are expensive and there are great challenges around development of antibiotic drug resistance and care should be taken in prescribing these live-saving drugs.

This finding of negligible complications means that facilitators of future programs and health leaders in the district and province can have some confidence that the young men participating in the new male rite will not be harmed during the medical operation. In other words, this is evidence that the penile operation of the modified ritual is quite safe compared to the penile bleeding procedures of the past that contributed to the ceasing of this tradition some fifty years ago (8, 26). In addition, the finding of negligible complications may mean that the young men in the communities could be more willing to participate in the program given that the new rite will not be as forbidding as the ceremonies in the past. On the other hand, it is uncertain whether this lowered-risk of complications will be beneficial to the overall initiation process of the men, including of enabling them to adopt health-promoting behaviours.

From the perspective of the bio-medical leader, the lowered-risk MICs is ideal. This is because the health workers' participation in activities that minimizes harm but concurrently increases health outcomes is consistent with their sworn-oath of non-maleficence or of non-harming of individuals (8). This means health workers are likely to participate in providing the MMC operation to initiates at future MICs in Yangoru-Saussia. Without health workers, providing MMC to initiates would be

impractical given that only registered health workers are allowed to perform medical procedures in the country.

To the cultural leader, negligible complications found in this study may not do any good to the significance and worth of the rites, although the cultural leader might be happy that at least the safe MC procedure fits into the void left by the high-risk penile-cutting operations of past ceremonies. This is because the taking of risks by young men in the initiation process and of overcoming those risks is an integral part of what makes a boy become a man (8, 29, 30). It represents the story of how the initiate becomes a man by overcoming the risks and the hurdles of the rite. Risks in this sense are like benchmarks that initiates will look back to and tell their stories, recounting to other people that they overcame the risks and obstacles and that was how they became the men that they are. How could these diverging ends of the discourse between bio-medical risks and cultural worth be knitted closer together? In addition, who is responsible to decide on this matter? Perhaps, the suggestion made by some cultural leaders in the acceptability assessment about employing an additional but less risky razor-blade bloodletting following MMC could help in closing that gap between bio-medical risks and cultural worth.

9.3.2. Integration of medical male circumcision within traditional male initiation ceremonies was culturally sensitive

The MMC operation was integrated into the male rite in a culturally sensitive way. This means that the people and in particular, the cultural leaders in this community are likely to accept and be more receptive to the modern or non-traditional activity that would be occurring within this sacred male tradition. In other words, the cultural leaders and others in the communities in this setting could be confident that the changes taking place; of involving health workers in the sacred rite is not meant to destroy the local tradition but to revive and maintain a modified form of it against the tide of modernization that is sweeping across PNG including Yangoru-Saussia. Thus, health workers were men of the culture under study; the operation was provided within the initiation seclusion (just like the operation of past ceremonies); initiates were brought to the operation site under the cover of darkness; and the operators observed taboos of the male ritual just like everyone else found within the male initiation seclusion.

In addition, integrating MMC into the traditional rite in a culturally sensitive way shows that there is respect for local tradition and for the cultural leaders who are the custodians of the tradition under

study. Showing respect is important to build trust among the people of this culture. This is because the changes proposed have not been attempted before and the people being led in this venture are still in the process of understanding the changes and what it means to themselves and their tradition and that they could easily reject the idea if they lose confidence in the initiative. In this study, the people had trust in the changes as evidenced in whole village communities and people in general in Yangoru-Saussia supporting the new program particularly with their personal resources. The key in sustaining this trust among the people may lie in emphasizing 'cultural preservation' as the main motivator for the said intervention (to integrate MMC within the rites).

That said, the traditional penile-cutting operations of some communities in the past occurred within initiation seclusions, hence the decision to perform the medical operation onsite in the new program. In other communities (in the past), however, the cutting occurred beside fast flowing streams, usually in the early hours of the morning. This option was not considered in the new program mainly because of security concerns for the medical personnel. In those communities that did their penile-operations outside of initiation seclusions, the initiates were brought to the streams in secret, usually before the break of dawn (8, 9). Thus, the initiates from participating communities in the new program were transported to the site of medical operation in secret at night. It can be seen therefore that the modifications to tradition were still within the boundaries dictated by local custom.

This finding of culturally sensitive integration of MMC within the MICs does not, however, imply that cultural leaders are happy about the change. The findings come from descriptions made by the researcher during the medical operation. Ideally though, it is the views of cultural leaders involved in the new rite that should help inform this discourse on whether or not the changes made are appropriate. It should be noted, however, that the cultural leaders might not be in a position to give a balanced view in this matter given that although they are the experts in the local tradition, they may not have sufficient knowledge of the changes propagated by modernization. In addition, the cultural leaders may not have the intellectual framework to fully answer a question that asks about mixing of cultures in order to 'save' rather than to 'destroy' a valued indigenous practice. Over time though, cultural leaders may be able to give a balanced view of the intervention if or when more of the new rites are staged in the communities and their experience and understanding of the fundamental changes in the intervention deepens.

9.3.3. Many men had existing longitudinal foreskin cuts

A large proportion of the men going through initiation had existing longitudinal foreskin cuts. This unusual type of cut among the young men in this setting indicated that unsafe foreskin cutting practices was rife in the communities. Earlier studies in PNG have documented longitudinal foreskin cuts among men in PNG, some of which were said to have occurred for cultural reasons. Thus, in this setting in Yangoru-Saussia where penile operations have been part of tradition, it is logical to think that cultural practice of the past had some influence on foreskin cutting among the young men. In an effort to establish a link with past traditions, young men in this setting might be preferring non-medical forms of foreskin cutting or penile operations that involve secrecy, bleeding and some amount of risk. Hence, the new MICs could help men avoid this risky practice by providing safe foreskin cutting in a culturally sensitive way. However as mentioned earlier, there is still this dilemma of whether reducing risks in the foreskin cutting operation will affect the cultural significance of the rite.

On the bio-medical front, operating on the men with existing foreskin cuts was challenging given that the step-by-step procedure to completely circumcise men with these cuts have not be documented. Detailed descriptions of the techniques applied in fully circumcising partially circumcised men or of converting longitudinal cut partial circumcision to full circumcision in this setting will be discussed elsewhere. It should be noted from this experience, however, that men with existing longitudinal foreskin cuts are likely to be encountered at future rites in this setting and the operators should expert to operate on some of these men.

There is evidence though that longitudinal foreskin cutting has HIV protective effects similar to the protective effect of circumferential cut or complete foreskin removal (31). This means that it may not be necessary in terms of HIV prevention to fully circumcise the men with existing longitudinal cuts. The operators of the medical operation and the clients thus now have a choice on whether or not to convert the partial circumcision to full circumcision. To the facilitator of the new program the evidence of HIV protection by longitudinal cuts is good news given that fewer number of men may require the MMC operation, so that less time and resources are required to provide this medical service. To the cultural leader on the other hand, the choice on whether or not to cut may not be helpful since some amount of bleeding is required to symbolize the 'letting of maternal blood' and of transitioning from boyhood to manhood.

That said, the MC operation time in the new program should be kept to the barest minimum. The operating room in the makeshift shelter is exposed to insects, wind and dust and prolonging the operation time will increase the likelihood of wound infections. Thus, aligning of the wound edges in men with existing cut should be done faster. It is possible that the time taken to operate on these men (with existing cut) will be reduced when the operators get more experience on the techniques applied.

Facilitators of future programs could also limit the risk of wound infection at future programs by ensuring that the operation room is free of insects, dust and other mediums of wound infection. For a start, the operating room should be enclosed with fly wire to prevent flying insects including flies from affecting the MMC operation. Program facilitators could also consider providing the medical operation in a canvas shelter that has insect-screened windows and doors. A good-sized canvas shelter might be free of dust and insects, and thus may be the best out-door shelter to operate on men in this setting. It is recommended, however, that a change like this is first agreed to by the cultural leaders and other guardians of the culture under study given that these changes might be seen as additional intrusions.

9.3.4. It took considerable effort in staging the new male initiation ceremonies

It took considerable planning, time, labor, money and networking to stage the new rite that successfully incorporated MMC. This means that organizing future programs in Yangoru-Saussia may not be easy. Here then is where the organizer of the event is brought into this discourse of whether or not it is feasible to integrate MMC within MICs in Yangoru-Saussia. Bio-medically, it is feasible given that complications were negligible. Culturally, there are some debates that can be worked at. If, however, the event cannot be organized and staged then the whole effort amounts next to nothing. So would it be feasible to organize the staging of the new male rite in the study setting?

Part of the reason why it took such an effort in staging the new rite in Yangoru-Saussia in 2015 was that the MICs in this setting have been inexistent for generations and many people were unsure about the changes suggested in the proposition including of staging a modified form of the bygone tradition. The people were unsure if the said undertaking was going to work. In other words, they were uncertain whether the undertaking was worth their effort and resources. This doubt that people had was evident in the acceptability assessment where the proposition to substitute traditional penile bleeding with MMC was intensely contested. Hence, the facilitators of the inaugural program spent a lot more effort

and resources in bringing interested people together to stage the first MMC-integrated MICs in Yangoru-Saussia.

The people's uncertainty is also reflected in their concern over the revival of unchristian practices and the cultural leaders' call for government support. Thus, future programs will still need awareness campaigns to be conducted throughout the district and important networks to be formed with key people including cultural leaders, community leaders and institutional managers. In the new rite staged in this study, billboards were erected along the Sepik Highway, special meetings were conducted with cultural and community leaders (including district and school administrators), announcements were made on the local radio station and public speeches were given at market gatherings throughout the district. In addition, an awareness and fundraising dinner was held in Port Moresby (the nation's capital) where important leaders including the MP representing the people of Yangoru-Saussia and the director of the National Cultural Commission attended (26) (See Appendix II). Subsequent programs may not require the level of awareness employed in the inaugural program because the first program had left a positive impression and many people are now looking forward to participating in the programs to come.

Facilitators of the new MICs in this study went through great lengths (spending fuel, time and money) to recruit culturally appropriate health workers to operate on the men. Thus, it may not be easy to find and engage health workers fulfilling the cultural requirements of the male initiation rites in this setting at future programs. In addition, those fulfilling the criteria are too few and their engagement in the new HIV prevention program should be arranged in a way that does not compromise their primary responsibilities (which is health service delivery at their respective health facilities). Facilitators of future programs should apply the approach used in this study by arranging leave for the male health workers well in advance of the actual operation date.

Another option to consider in increasing the availability of culturally appropriate health workers for the new MICs is to establish a pool of interested male health workers of local origin that can take part in the medical operation depending on their availability. There are many male health workers of local origin who are working domestically and internationally, in public and private sectors, who could be willing to participate in the new program. The names and contact details of these health professionals should be kept in a file so that program facilitators of future rites could contact and possibly engage their services. These health workers are expected to respond positively to the service request because the new MICs is also about preserving their cultural identity and about providing sexual health

education to the young men in their respective village communities. However, it is unclear if these health workers would actually be willing to spare some of their time and personal resources in the new program.

Much of the funds needed for the program in 2015 came from fundraising activities and contributions from individuals. This means that it may be possible to stage modified MICs without official sponsorship from government or other support organizations. This is important because as stated earlier, there is funding constraints in PNG and new programs such as the modified MICs are unlikely to get financial support from the government and its agencies including the National Department of Health (18). In addition, the new program should as much as possible, be self-sustaining. One option in this regard is to ask for a service fee from participants of the rites. In the 2015 program, the ritual participants registered their interest by paying a service fee of K30.00 (USD 10.00). However, that amount was insufficient to cover the cost per initiate so the facilitators of the program organized fundraising activities and sought sponsorship from individuals and local businesses. Facilitators of future programs could also use the same methods in generating the needed funds.

That said, those interested in organizing the new MICs in this setting in the future should establish a working group or committee. This is vital particularly because most people want to be confident that any resources including money that they contribute to the new program is put to the intended use. In other words, people including the sponsors of the program want to be confident that their contributions are not misused. Misuse, diversion of funds and corruption are significant issues currently affecting service delivery in PNG (28). In addition, there is strong political rivalry in the study setting and people are mindful that their contributions could be used by individuals to gain political leverage in the national elections. Moreover, big companies and donor agencies are unlikely to support the new program if a system of accountability does not exist. Thus, it is imperative that a working committee is established for the new program.

Organizers of future programs should also be mindful of the political affiliations that people have in the district. This is because local politics can make or break a program irrespective of the benefits of the program. For instance, some of the district's resources including funding can go to the program if the program has the full backing of the people in power in district politics including the local MP. However, people who have not voted for those in power are unlikely to support the program if they think that the program will enable those in power to score political points. On the other hand, if those in power sense that the new program is set up to aid rival political candidates, the chances of receiving

financial or resource support from local government or the Yangoru-Saussia District Development Authority would be next to zero.

How do we proceed then with the dilemma in local politics? It is suggested that the coordinator or facilitator of the new program tread carefully in this area. Maintaining political neutrality may be helpful to the program, at least in the long run. This means essentially that people in general must not get an impression that the program is politically motivated. In other words, organizers of future programs must ensure and be very clear from the start that the new program is not a political propaganda. It should be stressed rather that, the new program is a science-based public health intervention to improve individual and community well-being in Yangoru-Saussia. Maintaining this political neutrality may result in lower level of support initially as people will still have reservations, as was the case in the inaugural program in 2015. However, proof from the staging of politically neutral rites in the future may eventually attract the support of all people regardless of their political affiliations.

9.3.4. People of local origin led and organized the new male initiation ceremonies in Yangoru-Saussia

The persons leading the staging of the new rite and the research associated with the program were health experts who originated from the culture under study. This arrangement of indigenous persons leading the intervention may have played a vital role in the success of the program in 2015. This was because these health providers were in that unique space of linking health, local culture and modern medical practices. In that linking space, they were able to ask about changes to tradition that others cannot ask. It is unethical for people of other cultures to ask this question about change in tradition because they are not part of the culture in question. Similarly, local people without background in biomedicine and health service delivery may be unable to ask this question because they may not have the required level of knowledge and understanding of the technical issues that come with that question.

It is advisable therefore, that health experts of local origin lead future programs in this setting. This is crucial because the people in the study setting need to be confident that the intention is genuine and that modifications to tradition are being done in the best interest of local culture. Further, seeing persons of their own cultural background leading this change in tradition could appease the doubts they (the people) may have about the cultural benefit of the new program. People in Yangoru-Saussia – like other indigenous communities in PNG and around the world – are struggling to maintain their

traditions and it is prudent that this intervention is seen as culturally beneficial rather than the opposite. Without local people taking lead, this intervention might seem like an intrusion and defacing of local tradition and people in this setting maybe unwilling to participate.

However, who among the local people can put their hand up to lead or help facilitate the staging of this new male rite in Yangoru-Saussia? For a start, as seen earlier, it is not an easy task. The person to lead (and others who help) must be able to communicate clearly with people at all levels from the village people in the communities in Yangoru-Saussia to the health and political leaders at the high offices in the nation's capital. In addition, this person should have a lot of patience given that many misconceptions about this new idea exists and ongoing corrections are necessary at least in the first one or two years of the program. Above all, however, this lead person should have a genuine interest to improve the livelihoods of local people in Yangoru-Saussia. Without this interest, the difficult challenges associated with the intervention could easily discourage even the best facilitator of such programs.

9.4. Study Part Four (Short-term impact evaluation): The new male initiation ceremonies had high positive impact on initiates and on participating communities

Overall, the new MICs had high positive impact on the initiates and their respective communities. Initiates had changed mindsets and their level of cultural knowledge and skills were markedly improved. The new MICs also improved the well-being of communities that participated in the program. On the other hand, the new program caused some rifts between the villagers in their respective communities. In the paragraphs that follow, I will discuss these effects of the new MICs among participating communities in Yangoru-Saussia.

9.4.1. The new program changed the mindset of initiates

The initiates' mindset were changed and they are now said to be more responsible in their conduct. This positive outcome suggests that in spite of the modifications to tradition (including of integrating MMC), the new MICs may still be able to accomplish the 'mindset-change' function of the previously ceased male rites. The cultural leaders and people in Yangoru-Saussia who had doubts about the modifications can now be confident that the young men going through the new initiation process could still be changed and made to relinquish their childhood ways and adopt adult responsible behaviours. This positive outcome may also mean that it is not necessary to subject the initiates to

excruciating pain and life threatening operations in order to have them abandon their childhood ways and to adopt manly behaviours.

The change in the mindset of initiates was also reflected in the improvement in community well-being reported by the leaders interviewed. Marked reduction in mischievous behaviours and consumption of locally made alcohol and marijuana (drugs) were reported. This demonstrates that not only is the modified male ritual important to individual initiates, it is also beneficial to whole communities by making them safe especially for women and children in the study setting. Male youths causing violence under the influence of alcohol and illicit drugs is a growing concern in many communities in PNG, including in Yangoru-Saussia. The new MICs can thus contribute meaningfully in making the communities safe through its 'mindset-change' effect on participating young men.

The cultural leader on the other hand may still prefer the old ways because he may not see beyond his experience of the past. This is where the linking person comes in: a health expert of local origin who is well educated and who having travelled outside of the district, was exposed to other ways of doing things. This person does not impose his/her views, rather he/she facilitates the discussion about the changes to the MICs in this setting and helps the cultural leaders and other key people in this discourse see that the new program could still achieve the mindset-change objective of the old rite through the new and safer alternative like MMC.

It should be noted too that the change in mindset brought about by the new ritual could be an important medium for fostering academic excellence among male students in schools, as pointed out by a community leader. Many boys in this setting today have a hard time mastering academic subjects because they are most often distracted by the new practices associated with modernization. It is anticipated that by going through the initiation ritual and having their mindsets changed, the initiates could be more settled and focused in their thoughts and may be able to grasp school lessons, theories and concepts faster. Here then is where the educationist in the district should have an interest because the new male rite does not only concern HIV prevention and community well-being, it also may concern the transforming of academic performances of young men in schools, although research has yet to demonstrate that initiated boys can perform better academically compared to non-initiated boys.

9.4.2. Theories for the change in mindset

A number of theories have emerged for the change in mindset observed in initiates. One theory is that the change in mindset was the effect of the traditional herbs ingested by initiates. Little is known

about this herbal plant and how it was prepared. This traditional plant could contain some mind-enhancing elements that caused the change in the way initiates were thinking and viewing the world around them. What is known is that this traditional herb was given to initiates in a way that demanded a change in their conduct. It was like a missioning ceremony wherein participants are bestowed with a sense of responsibility towards the values promoted by the missioning group (or institution), which in this case was the group of elders who initiated the men. So was the change in mindset the effect of the traditional herb or was it the effect of the ceremony associated with its ingestion? Further research is needed to establish whether there is a relationship between mindset change and ingestion of traditional herbs.

Being released from the polluting effects of menstrual blood is the other theory that emerged. It is said that menstrual blood is polluting to men and to transition from boyhood to manhood, an initiate – who at some stage in his childhood had come into contact with menstrual blood – must release that blood. In Yangoru-Saussia, this polluting blood was released from initiates through penile-cutting operations such as the splitting of the glans penis with cassowary bone daggers (8, 9, 26). Again, it is unclear as to how the physical release of blood from initiates causes a change in initiates' mindset. It is postulated that it is a psychological effect of the penile-cutting ritual. Psychologist could perhaps help in this discourse by describing how exactly the symbolic release of maternal menstrual blood during penile operations causes a shift in the way initiated men think and behave.

Biologically, the release of some amount of blood from the human body triggers an increase in the production of new red blood cells that can be more efficient in their capacity to transport and deliver oxygen to actively respiring cells (32, 33). Thus, tissue perfusion is enhanced, cell functions (including brain cells) optimized and a positive change in whole body functions and mental states may be felt (34). Phlebotomy – the deliberate release of blood – utilizes this concept and stimulates the production of fresh and efficient red blood cells for health and disease prevention (34, 35).

One could also consider that the change in mindset in initiates could have been the collective effect of all activities of the new male ritual, including the herbal ingestion ritual and the penile cutting operation. In other words, each activity of the rite could have played a part in conditioning the mind to a point at which it reprograms its way of thinking and of viewing the world. Future research involving mind experts could help improve our understanding in this area.

9.4.3. Change in mindset in initiates critical to worth of male initiation ceremonies

It appeared that ‘change in mindset’ is the most crucial outcome for initiates in the new program. It is something without which the whole initiation process would seem meaningless. Thus, facilitators of future MICs should as much as possible ensure that the herbs ingestion ritual, penile-cutting operations and other mindset-changing activities are maintained.

Changing mindset by subjecting initiates to that near-death with the traditional penile-splitting operation is not possible in the new program given the high risk of death. Thus, facilitators of future rites should consider the penile-pricking procedures suggested by some cultural leaders (in the acceptability assessment) so that the initiates could release some amount of blood through this process after they have been medically circumcised. Although initiates still face some amount of risk with this option, the psychological effect of the procedure (which positively changes the mindset of initiates) may outweigh this risk. This option of penile pricking may be excluded in the new rite if key people particularly cultural leaders accept the amount of blood loss during medical foreskin cutting as sufficient in signifying the release of maternal menstrual blood from the initiates’ body.

However, if substantial modification of the penile-cutting practice is non-negotiable then the herbs ingesting ritual, which seems relatively safe so that a change in mindset can still manifest in the initiated men. Facilitators of future programs should also consider introducing the initiates to their ancestral, clan and tribal spirits at the spirit house or ‘haus tambaran’ to further the prospect of mindset change. However, ‘haus tambaran visits’ may be confronting to established Christian beliefs and are best discussed and perhaps implemented in collaboration with leaders of local churches. Hostile conflicts could be created between cultural and church groups or between villages if key leaders such as church pastors and priests are not involved in decisions that could possibly upset the Christian population in the district. However, the success story of the building and commissioning of the Belmore Spirit House in 2015 indicates that conflicts are unlikely if local people act in one accord irrespective of denominational affiliations.

9.4.4. The new male initiation ceremonies increased cultural knowledge and skills of initiates

A frequently mentioned (by study participants) change in initiates was the increase in their cultural knowledge and skills. The young men who underwent cultural training over the four weeks of initiation

were said to be much better at sending messages via the traditional garamut drum and they could now confidently use the kundu drum and the long bamboo flute at traditional dances or singsings. They could also participate confidently in traditional singsings. This gain in initiates suggest that the transmission of important cultural skills and knowledge to young men (which is a major objective of the rite) during initiation in this setting was achieved in the new program. Thus, the new rite could be an important medium for preservation of unique traditional practices in Yangoru-Saussia district. This is in stark contrast to the fears people have that changes to tradition may be detrimental to local culture.

It is important to note that the cultural training provided at the new MICs was merely an introduction: that a much longer period of training and practice would be required for initiates to master the cultural subjects taught during the ceremony. Post-initiation training sessions for the boys to consolidate the skills introduced at initiation as suggested by a cultural leader should be considered at future programs. In addition, the local authorities in Yangoru-Saussia should consider staging the new MICs annually so that previously initiated men could strengthen their cultural skills and knowledge by taking part in subsequent programs as peer educators and trainers. Moreover, curriculum designers could help initiates consolidate some of these skills by incorporating them within the education curriculum for boys going to school.

9.4.5. The new male initiation ceremonies prevented life-threatening injuries

Unlike in the past when initiates faced the possibility of death during initiation, the new manhood rite was devoid of life threatening injuries. The rate and type of complications arising from the medical operation were low and minor respectively. In addition, the past practice of ‘initiate thrashing’ (with fresh sticks) which posed some amount of risk to ritual participants was avoided. This avoidance of injuries in the new program is expected to increase community participation. People in the communities having reservations about precarious activities of the male rite may now have their concerns addressed so they could feel free to support and participate in the new program.

Without risks and hardships, however, the transition rites could become meaningless. This is because risks and hardships serve as obstacles to which initiates must overcome in order to feel a sense of achievement or a sense of transitioning from a carefree life to a life of facing (and overcoming) risks and hardships. The question is asked again; how can the significance and worth of the rite be balanced with risk reduction? It is also interesting to ask whether initiates of the male ritual felt a sense of

transformation and change from their old ways. Future studies should investigate these questions. In particular, future studies should determine whether the relatively risk-free traditional herb ingestion activity have had a positive effect on initiates' sense of boy-to-man transition. If herb ingestion is not helpful to the worth and significance of the new rite, then other ways of adding value to the rite should be sought including the option of getting the initiates into the spirit house to show them the carvings representing long gone relatives (26).

9.4.6. The new program caused rifts between villages

As is expected of new programs, there were many misunderstandings that caused rifts between villagers in participating communities. An important misunderstanding was that people were being sponsored to participate in the program. This misunderstanding led to subtle arguments and ill feelings within the program organizers and participants, which could have been detrimental to the overall program. The new rite staged in 2015 was not a funded project. Rather, it was a self-help project wherein health professionals of the culture under study investigated the possibility of modifying and re-establishing the MICs for HIV prevention and for cultural preservation. The idea of 'self-help' unfortunately may not have been fully understood by the local people involved in the program.

It is advisable therefore, that the concept of self-help is introduced early in the program and any ideas about huge amounts of money and people being paid is investigated and corrected as soon as they arise. This is vital to maintain harmony among the facilitators of the program, particularly the cultural leaders most of whom would be sacrificing their time and energy in transmitting their cultural knowledge and skills to the initiates. For instance, a cultural leader might feel belittled if he thinks that other cultural leaders are getting more in allowances than him. If that happens, that cultural leader could withdraw his services and spread false and defacing information that may be detrimental to the intervention under study.

In addition, it may be helpful to relay to the people in a firm but non-confrontational way that it is the responsibility of people in Yangoru-Saussia to ensure the upkeep of their valued traditional practices. In other words, it is not appropriate for local people (cultural leaders included) to seek payment for their participation in a program that serves their own unique interest, which is to maintain their traditional practices. It might help also to remind the local people that facilitators of past programs did not receive outside financial aid to stage their rites, although it can be argued that there was no

cash back then. The point, however, is that people in this setting must be helped to think ‘self-help’ rather than government or donor funding and flow of large amounts of cash.

Another misunderstanding that needs to be dealt with delicately is the perception that the staging of the new MICs is against established Christian beliefs. Some villagers who were active members of the local Christian churches were very critical about the new male program and there were instances of verbal confrontations between those church-going villagers and villagers who chose to participate in the new manhood rite. This confrontation stemmed from the fact that Christian faith is firmly rooted in the local people (36, 37). Thus, the people in this setting will have a natural tendency to reject practices that conflict with the belief already established in their thoughts.

The misunderstanding associated with Christian belief is also expected given that the old MICs were known to be associated with honoring of ancestral spirits, black magic practices and other activities that were at odds with Christian doctrines (8, 9, 26). It is essential then that this misunderstanding is cleared promptly at the very beginning of the program. Churches are vital in maintaining peace and good order in communities. Churches are also providing vital services such as health and education and thus are key partners in the development of communities in Yangoru-Saussia.

Facilitators of the new program should ‘work with’ rather than against the churches. Here is where the church leader and the cultural leader could come together to iron out their differences and perhaps cast away deeply held beliefs that are no longer true. The program facilitators and linking persons such as the researcher (CM) could also help at this stage by educating the church leaders and churchgoers about the concept of establishing the new MICs and all that it entails including the idea that the new program will be devoid of unchristian activities. In this study, a number of awareness campaigns were carried out before the new rite was staged. However, the confrontation between program facilitators and church goers in one community suggest that a lot more awareness has to be done to have people understand that the proposed rite of passage ceremonies for men is a modified version of the old MICs: one which is designed to be safe and accommodating of the prevailing beliefs and practices including that of the Christian churches in the district.

9.4.7. Call to continue staging the new rites

The people and leaders in Yangoru-Saussia would like the staging of the new MICs to be continued. The respondents in this study and the people and leaders who gathered at the graduation and public display (of learnt traditional skills) in December 2015 at Maringei village spoke positively of the new

program and called for the event to be staged regularly (Appendix II). This support and call for program continuation suggest that the local people and leaders (including political, administrative and cultural leaders) are seeing the value of the new program including its benefit to them as individuals and the young men in their communities. However, who will hear the call of this people in Yangoru-Saussia and their leaders? Who is responsible in Yangoru-Saussia or in PNG in ensuring that important traditions such as male transition rites are modified and maintained in the modern era?

One thing to take note of, however, is that all the positive comments received from the study respondents and from leaders at the public display on graduation day were about culture and the importance of preserving the unique traditional practices in the district. There was no mention of HIV prevention. This suggests that people in this setting are looking more at the general picture, towards the social determinants of health rather than the individual problem of HIV. They may be saying in other words that the HIV issue can be sorted by first addressing the well-being of individuals and communities in the district. The MICs in this setting in the past guided the young men and were key mediums for the well-being of men and their respective communities. The well-being of young women were also tied to the MICs because it is at initiation that betrothal arrangements are sealed and an initiate's parents receive unto their care, the girl that is to be their son's wife (37, 38).

The ongoing staging of the new MICs in this setting may be more challenging than was anticipated. This is because the East Sepik Provincial AIDS Committee (a branch of the National AIDS Council of Papua New Guinea) – which provided the leadership in this initiative – in its current state is unable to support such programs in the Province. The ESPAC office has now been downsized and incorporated within the Health Division of the East Sepik Provincial Administration with significant cuts to its annual operational budgets. The leadership for the ongoing staging of the rites should therefore come from somewhere else. To start with, it is suggested that the researchers in this study (particularly the lead researcher) serve as contact points for groups and individuals interested in supporting the continued staging of the new MICs in Yangoru-Saussia. It should be noted, however, that without strong support from interested individuals and groups, and without the formation of an official working group or committee, staging of the new MICs would be a mammoth task for any individual.

9.5. The new male initiation ceremonies and HIV prevention – the Hwelempo model

The preceding paragraphs have shown that despite many existing challenges, it is feasible to integrate MMC within MICs for HIV prevention in Yangoru-Saussia. Thus, an exceptional approach to HIV prevention in Yangoru-Saussia is presented. The new MICs is not just about men and their ability to avoid HIV infection, it is also about women and every person in the community. It is an intervention that changes men biologically and behaviourally for individual well-being and the well-being of others including women and children in their communities in Yangoru-Saussia. In the paragraphs that follow, I will describe the new male ritual and its application in HIV prevention in Yangoru-Saussia and elsewhere in PNG and abroad.

9.5.1. The Hwelembo model of HIV prevention

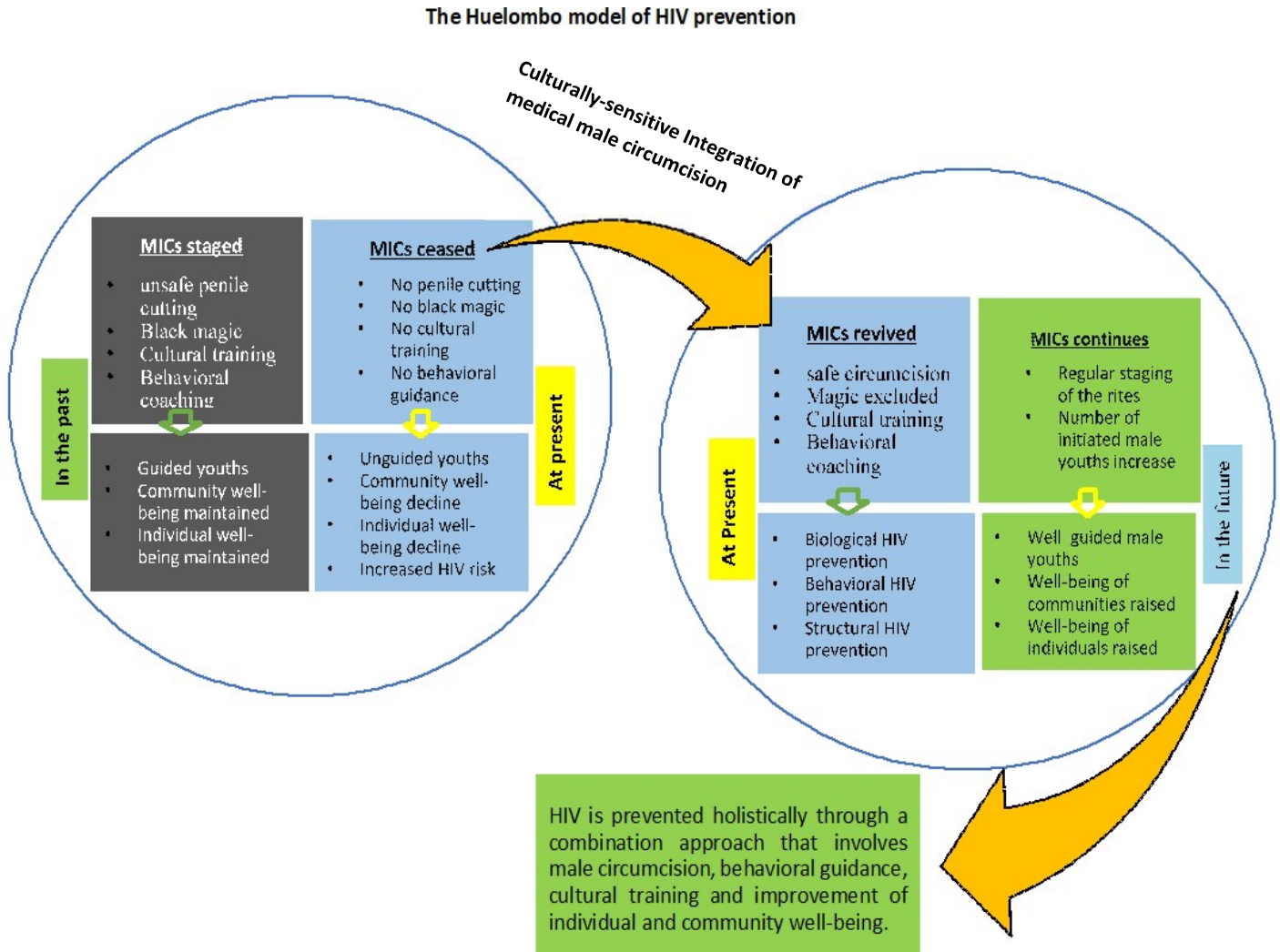
So what is the Hwelembo model of HIV prevention? Figure XII illustrates the Hwelembo model for HIV prevention. It is about merging a best practice of the past with a bio-medically useful practice of the present to counter the HIV threat and other social issues in the communities. This concept of combining tradition with a modern practice is similar to the use of the ‘Senga’ traditional ritual for the prevention of HIV in women in Africa, where the writer describes the union as ‘operating on middle road’ (39).

The HIV prevention approach presented by the new MICs is named ‘Hwelembo’, which in the Yangoru-Boiken language refers to the renowned male rite of passage ceremonies that involved prolonged periods of seclusion, cultural training and penile operations. The pronunciation of the name and its meaning was first described by Allen Freudenberg of Summer Institute of Linguistics (SIL) in the 1970s (40). The name of the old rite is kept in this model because in spite of the modifications, the purpose of the new rite is essentially the same as that of the old rite, which is to turn boys into men and to enable the transmission of cultural skills and knowledge from the elders to the next generation of leaders in the communities.

The Hwelembo model is also about revitalizing the ‘ni-ne’ or the ‘collective’ attitude that existed in the past, which was vital for community well-being (37, 38, 40). People in the past in this setting prioritized ‘ni-ne’ or common good over individual interests, which if maintained today could suppress a lot of the country’s problems including corruption, vandalism and other problems related to unguided youths. This ‘ni-ne’ ideology of Yangoru-Saussia is similar to the African ‘Ubuntu’, which means ‘I am because we are’ or that an individual’s wellbeing is connected to the well-being of the

whole or community (41). In other words, an individual’s well-being is only as good as the well-being of the community in which that person lives.

Figure XII. The Hwelembo model for HIV prevention



9.5.2. Hwelembo model fulfills important recommendations for HIV prevention

By integrating MMC, the Hwelembo model responds to a priority national policy recommendation to increase the accessibility of safe circumcision to men undergoing non-medical foreskin cutting in PNG (16). In addition, the Hwelembo model fulfils the WHO/UNAIDS recommendation for MC to be provided in combination with other behaviour change programs rather than as standalone

interventions (1). The new male ritual has two behaviour-changing activities (professional HIV counselling and testing and traditional counselling) that accompany the MC operation. Besides that, the statutes of the male rite also contributes to fulfilling the WHO/UNAIDS recommendation by serving as guides to initiates' behaviours, particularly against sexual risk behaviours.

The Hwelembo model is also in line with a major recommendation for HIV prevention in the Pacific. Following extensive HIV research in the Pacific, Jenkins and Buchannan, concluded that culture and context matter in HIV prevention (42). The Hwelembo model (or the new manhood rite) is an intervention that could modify both culture and context for HIV prevention. It will help to revive the best practices of the past and add value to the lives of people in the district (and elsewhere where it is adopted) so that while people move forward with development and new technologies, they will have their traditional values to guide and help them avoid practices that will put them at risk of contracting HIV and other STIs. The best thing perhaps, about the Hwelembo model is that it is derived locally from a highly valued but prematurely ceased traditional practice.

9.6. Utilizing the Hwelembo model for HIV prevention

The Hwelembo model is developed specifically to reduce the likelihood of young men acquiring HIV in Yangoru-Saussia. However, the concept applied including of modifying the rites to make them safe and relevant to contemporary livelihood could be applied in other traditionally-circumcising communities in PNG and around the world. Applying the Hwelembo model for HIV prevention in Yangoru-Saussia or elsewhere, will also depend on factors such as support by cultural and political leaders, the formulation of policies, and funding from governments and development partners. In the paragraphs that follow, I will provide suggestions on how the Hwelembo model could be utilized for HIV prevention in Yangoru-Saussia and other traditionally-circumcising communities in PNG and around the world.

9.6.1. The Hwelembo model for HIV prevention in Yangoru-Saussia (at district level)

The utilization of the Hwelembo model for HIV prevention in Yangoru-Saussia should not be difficult. The first program in 2015 laid the foundation and many people are waiting and hoping to participate in the program, as evidenced by the results of the acceptability and impact evaluation of this study. In addition, the acceptability assessment of this study show that local people are likely to fully support the program as long as the concerns highlighted by the study respondents are addressed.

As stated by a cultural leader in Yangoru-Saussia, “all that is needed is for someone to start it: to put the fire at one spot and everywhere in Yangoru-Saussia will come alight with the fires of initiation ceremonies” (8, 9).

Leadership is a key factor in utilizing the *Hwelembo* model for HIV prevention in Yangoru-Saussia. The program may only need someone or group to lead and organize the interested individuals, groups and communities. In the new program, officers of the East Sepik Provincial AIDS Committee and the lead investigator of this study (CM) led the planning, promotion and actual staging of the male ritual, and the program was well supported by the participating communities and by the administrative and political leaders of the district. These persons who led the inaugural rite are unable to spearhead future programs given that the East Sepik Provincial AIDS Committee has now become somewhat defunct with the downsizing of the National AIDS Council and that the lead researcher of this study has now become a full employee at Divine Word University. Thus, the question as to who will take lead in this initiative remains unanswered.

It is suggested that the utilization of the Hwelembo (HIV prevention) model is led by a group made up of individuals who have a shared goal of reviving the old male tradition and preserving valued cultural practices in Yangoru-Saussia. This group could have the ‘staging of the new MICs’ as their primary responsibility. A group like that could consist of individuals with expertise in the local culture, in health service provision, and in district service delivery. It would be a bonus to have individuals who helped in the staging of the 2015 program to be part of the new committee. However, this new committee should first get the group or program registered officially and policies and protocols be formulated before the rites are scheduled and staged.

As described earlier, politics is another important factor to be considered in utilization of the Hwelembo model for HIV prevention in the study setting. This is because allocation of the district’s resources including the leadership support are tied to politics. The political head of the district is the Member for Yangoru-Saussia (MP), who is also the chairperson of the Yangoru-Saussia District Development Authority, the entity that determines how the district’s resources (including government funding) are distributed and what programs are funded. In addition, it is important to forge politically neutral but workable partnerships with the political leadership of the day given that the people have mandated these leaders and the involvement and support of these leaders could tow-in the support of the population. Hence, it would be helpful if the staging of future rite of passage ceremonies for men

in this setting is facilitated through the political leadership of the district, although the organizers must strive for neutrality in local politics.

That said, any support (particularly funding) from the district development authority will have to be authorized by a policy that directs and guides that support. Thus, one of the first steps in utilizing the Hwelembo model for HIV prevention in Yangoru-Saussia may be to formulate that policy. A policy meeting could be organized for this purpose. The findings including the suggestions provided in this study could be used in that meeting to formulate the policy. That policy could be named 'the Hwelembo policy' after the Hwelembo male initiation ceremony, and one of the directions could be for all boys in the district to go through this new program at puberty. This suggestion for boys going through initiation was made by a community leader who was himself a former high school teacher and deputy principal of Yangoru Secondary School.

Thus, the Hwelembo policy is not just for HIV prevention, it is also about the development of boys, their education and the preservation of valued cultural practices in the district. Such a policy would be in line with the five action areas of health promotion identified by WHO in the Ottawa Charter given that the initiative to re-establish the valued MICs in this setting would lead to building public health policy (Ottawa Charter – Action Area 1), creating supportive environments for individuals and local communities (Ottawa Charter – Action Area 2), strengthening community actions for health and well-being (Ottawa Charter – Action Area 3), developing personal skills for individual initiates and cultural leaders (Ottawa Charter – Action Area 4), and re-orientating health services to including prevention of illnesses through integration of biomedicine with tradition (Ottawa Charter – Action Area 5) (43). In addition, the said intervention fulfills the three basic strategies for health promotion identified by the Ottawa Charter. Health will be encouraged in the new program (Ottawa Charter – Strategy 1), an enabling environment will be provided for all individuals in the communities to gain health (Ottawa Charter – Strategy 2) and the initiative involves mediation between cultural, church, government, business and other groups (Ottawa Charter – Strategy 3) (43). The initiative to prevent HIV through revived MICs should therefore begin with formulation of the proposed Hwelembo policy.

Clearing of misconceptions held by people in the communities is another key factor in the utilization of the Hwelembo model (for HIV prevention) in Yangoru-Saussia. As the findings of this study demonstrates, misconceptions including revival of sorcery and unchristian activities are highly prevalent in the communities. People in the communities may be reluctant to participate in the new male ritual if these misconceptions are not cleared. This is because many people in this setting still

attribute illnesses and misfortunes to sorcery and ‘Sanguma’ (dark magic) (44). Thus, factual information about the new program should be made available to as many people as possible through mass information dissemination mediums including ‘community announcements’ through the local radio stations, erection of billboards at strategic locations, and presentations at public gatherings.

9.6.2. The Hwelembo model and HIV prevention in East Sepik Province (at provincial level)

It may be possible to apply the Hwelembo model for HIV prevention in other communities in East Sepik Province. This possibility stems from the fact that the initiation of boys into manhood was practiced in communities throughout the province prior to colonization and Christianization. It may not be difficult therefore for people in the communities in East Sepik to accept the concept of re-establishing a modified form of the MICs for HIV prevention. However, organizers of future programs should bear in mind that the traditional practices associated with MICs vary between the different cultural groups in the Province. For instance, the male ceremony in communities in Maprik district will be associated with a yam growing competition between villages (and men) where as in Yangoru-Saussia, the participating villages will contest for the biggest or highest number of pigs (45). Thus, it may be helpful to conduct an acceptability assessment before the Hwelembo model for HIV prevention is considered for other communities in East Sepik Province.

The possibility of utilizing the Hwelembo model for HIV prevention in East Sepik Province is heightened by the fact that a trial of the modified MICs was successfully staged in Drekikier district in 2013 (46). In that ceremony, young men and community elders camped in a secret location in the forest and health workers of local origin operated on the men in a small structure adjacent to the men’s house. That program was successful given the high community participation and low rate of complications from the medical operation. However, it is crucial to note that the new program in Drekikier was driven by the East Sepik Provincial AIDS Committee and not by the local people, as was the case for the program in Yangoru-Saussia. Thus, an assessment on community participation is needed prior to utilizing the Hwelembo model for HIV prevention in communities in Drekikier and other communities outside of Yangoru-Saussia.

Support from the Provincial government and its divisions, including the division of health, in the staging of modified MICs (the Hwelembo model) for HIV prevention may be limited. This is because in the first instance, there is no policy that directs the allocation of resources for this program. In

addition, resources including health workers, vehicles and funding is limited, just like the rest of PNG, and the use of Hwelembo model (or other HIV prevention programs for that matter) may not be a priority agenda: not when the health system in the province is struggling to provide even the basic of services such as supervised deliveries at health facilities throughout the province (18). Thus, persons or groups interested in utilizing the Hwelembo program at provincial level should not only seek support and endorsement from the provincial government (through its health division) but they should also invite support from other development partners including aid agencies such as European Union or Australian Department of Foreign Affairs and Trade (DFAT). This is in line with the WHO Ottawa Charter for health promotion as mention earlier (43).

Given the shortage of resources that continues to plague the country at all levels of service delivery, it is recommended that the leaders of future programs seek resourcing from within the cultural groups as opposed to seeking external support from government or its development partners. Although some people will not like this idea (since there is an established culture of dependency), it should be communicated clearly and firmly that it is possible to stage the rites without external support; that the people already have most of the resources required to stage the rites; that they have the land, gardens (and the required food), traditional instruments and the expertise to stage the rites. They even have money to contribute to the cost of the medical operation given the high cash flow from the sale of cocoa and other cash crops in the Province (47). The key factor in this scenario is leadership in mobilizing the skills and resources that people already have.

9.6.3. The Hwelembo model and HIV prevention in PNG (at national level)

Given the great diversity of cultural practices, the application of the Hwelembo model for HIV prevention at the national level may not be practical. Not many cultural groups in the country share the penile-cutting traditions described in this study. Outside of the Sepik Provinces, penile-cutting male rites are only known to some communities in Madang and West New Brittan provinces (49). Thus, the majority of the people in PNG may not relate well to the Hwelembo model for HIV prevention.

However, it is important to note that the practice of foreskin cutting has become commonplace and men in non-traditionally-circumcising communities are also undergoing foreskin cutting (14-17). This indicates that a slightly different form of the Hwelembo model for HIV prevention in non-traditionally-circumcising communities across PNG could be utilized to the same effect. On the other

hand, some people in those non-traditionally-circumcising communities may actually oppose the intervention to safeguard their traditions against outside influence. Thus, separate feasibility studies are needed if the Hwelembo model is to be considered for all communities in the country.

It may be worthy to consider that although penile and foreskin cutting practices were limited to communities in East Sepik, Madang and West New Britain Provinces, the practice of male initiation and of the segregation of men (in the hausman) and women (in the hausmeri) was somewhat universal, particularly in the pre-colonial days in PNG (29, 45, 48-50). Although the manhood rituals differed greatly in their practices, the underlying concepts were the same. It was about making boys into men; about strengthening the physical and mental abilities of the male initiates to take on (and overcome) the challenges of adulthood. Thus, the Hwelembo model may actually be highly acceptable in male initiating communities across PNG especially since foreskin cutting has become commonplace and many men across the country are choosing to be circumcised (14).

9.6.4. The Hwelembo model and HIV prevention in other countries (at international level)

Outside of PNG, the Hwelembo model may be beneficial bio-medically and socioculturally to traditionally-circumcising communities particularly in Africa. Among the Xhosa of South Africa, some 20,000 young men aged 15 to 17 years go through initiation rituals every year and face risks of serious complications from traditional circumcision including sepsis and death (51-53). Tribal leaders in that setting could consider adopting the Hwelembo model and integrating MMC within the rites in a culturally sensitive way so that the risks faced by initiates can be reduced. Adopting the Hwelembo model could increase the safety of participants, which in turn could result in more men participating in the programs so that the prospects of cultural preservation and HIV prevention are enhanced simultaneously.

It is possible that the fear of reducing the significance and worth of manhood rites is preventing traditionally-circumcising communities in Africa and penile-cutting tribal groups in indigenous Australia, from replacing unsafe traditional penile-cutting operations with the safer option of medically assisted male circumcision. Because of this fear, traditional circumcision is still being practiced and the young male participants are continuing to face the risks associated with these traditions (51, 52). This fear that people have (especially cultural leaders) about change to traditions, should be allayed by explaining that substituting a safer version of the traditional penile operations might be in the best

interest of tradition; that in the long run, it could result in greater community participation and survival of the rites and maintenance of other valued cultural practices associated with the ceremonies. However, any changes made to tradition should be consented to by the guardians of the tradition – the people and their cultural leaders.

Preserving the significance and worth of the rites is a key challenge – as seen in this study – in the changes made to increase participant safety at MICs. In their endeavor to preserve sacredness of their traditions, some leaders of initiation ceremonies in Africa are increasing safety of their participants by adopting safe practices such as instrument sanitation and training of traditional cutters (54). In this study, the approach was to provide health worker-administered foreskin cutting within the confines of the ceremonial grounds as opposed to having trained traditional cutters perform the operations described in African studies (55). The similarity though is that the cutters described in this study and those from studies in Africa are men who belong to the cultures performing the rites, which means the significance and cultural worth of the rites are maintained.

Nelson Mandella of South Africa states that cultural practices have to be adapted in order to survive and the changes being made to traditionally-circumcising MICs in Africa and in this study reflects that wisdom (56). The question that leaders would be asking though is how the changes can be navigated through the barrage of external influences without reducing the rites to meaningless events. In this study, a way forward in merging tradition and biomedicine for mutually beneficial outcomes was developed and presented for interested persons and groups to utilize. Through the Hwelempo model, qualified health workers of local origin provide safe MMC within the initiation seclusion enabling the previously ceased but valued tradition to be revived and continued and HIV is prevented holistically, not only by altering the initiates biologically and behaviourally, but also by ensuring the well-being of communities through reductions in violence caused by unguided male youths.

9.7. Limitations

This study has a number of limitations. One, the lead researcher (CM) originates from the area under study and this may have evoked researcher and participant biases in the responses and reporting respectively. However, these inherent biases have been managed in this study to elicit a range of responses that adds to the quality of the project as a whole. In addition, the lead researcher being of local origin was situated in that unique ‘insider-outsider’ position in studying this culture-oriented topic so that there is greater understanding of the issues brought forward by the study participants (57). The

outsider position also enables the researcher to detach himself from the culture under study and to see with clarity the changes that are needed in the merger between tradition and biomedicine in this unique HIV intervention in Yangoru-Saussia.

Two, this research was limited in the use of non-probability convenience sampling in the three cross-sectional surveys conducted. Thus, the views gathered may not be representative of the population in Yangoru-Saussia. However, it is pointed out that random sampling in this setting was inappropriate culturally and its application may have disrupted the study. People in this setting think highly of being included in important activities (including 'research participation' in this case) and missing out because of sampling techniques could have resulted in the people developing antagonistic views towards the study, which could have been detrimental to the overall research project.

Three, this study was also limited by the fact that the post-operative complications of the medical operation may have been under-reported. Some initiates may not have reported minor wound bleeding or swelling since reporting these complications may be perceived as a non-manly act. Initiates of bygone manhood rites in Yangoru-Saussia had to go through high risk activities to become a man. However, the participation of all initiates at the public display (on graduation day) demonstrates that any of the minor complications that may have arisen from the medical operation have healed completely. Future work in this area should include daily examination of wounds to elicit the true rate of complications following surgery in this setting.

Four, the views of health service providers and that of the male initiates were not included in the assessment. Gauging the views of health service providers could have provided important insights into the challenges and health opportunities presented by the new program. Likewise, the views provided by participants of the new program could have presented valuable information on how the initiation process could be improved. It is recommended that the views of health service providers and initiates themselves are assessed at future manhood rites to complement the findings put forward in this study.

Five, it is acknowledged that the findings in this study may represent what people in general and especially cultural leaders and elders say in regard to the new male rites. Do the young men today have the same views, and would they be willing to undergo this new culture-oriented medical program? This was an important limitation of this study given that ultimately, it is the young men who will decide if they want to participate or not. Future studies should look specifically at gauging the views of the

target population (young men) to assess their level of willingness to participate in the new program. Future studies should also interview men initiated in the new program to assess whether they have been changed mentally and behaviourally as indicated by the responses recorded in this study.

Six, this research used data from two previous studies. Although the data in those studies were kept safe and retrievable, the nuances associated with the earlier studies may have diminished over time. However, for the purpose of answering the research question in this study, the data from those earlier studies were still relevant and valid in comparing sexual risk behaviours between cut and uncut men and the assessment of local people's views on whether or not the previously ceased MICs in Yangoru-Saussia should be revived.

9.8. Conclusion

It is clear from the arguments presented that the integration of MMC within MICs is acceptable and feasible in Yangoru-Saussia given its cultural and historical context and the need of the people to maintain their cultural identity amidst the changes associated with modernization. However, there are inherent tensions and dilemmas that should be carefully considered. Of special note is the finding that people are very supportive of the said intervention but are also concerned about the effect this change may have to tradition and the established beliefs and practices in the communities. It is also important to note that resourcing associated with this intervention presents a formidable challenge that program organizers must include in their planning of such programs.

The path to realizing this unique intervention lies in dialogue between the different parties involved. Here is where the respective leaders in culture, biomedicine, Christian religion, education and governance should come together and chart a path that is beneficial to all parties concerned. The changes made to tradition have not reduced the significance and worth of the male rite given the change in the initiates and improvement in community well-being reported in this study. Thus, the new program may help address the increase in social disorders in the communities in Yangoru-Saussia.

Facilitators of future programs should be of local origin and all misconceptions surrounding the new program should be dispelled prior to the staging of the rites. A customary user-pay arrangement should also be adopted and fostered for program sustainability. It should be emphasized that the responsibility of maintaining the unique cultural practices and ensuring individual and community well-being lies with the people themselves and not outsiders. In addition, the 'ni-ne' or collective attitude should be re-ignited to make the intervention work.

The Hwelembo model developed in this study is intended for a multi-method HIV prevention in Yangoru-Saussia district. However, the model can be applied in other traditionally-circumcising communities in PNG and elsewhere depending on the acceptability and other factors including resourcing that affects the feasibility of staging such a program. It is noted nonetheless that the Hwelembo model (for HIV prevention) fulfils a national priority agenda to increase the availability of safe male circumcision (for HIV prevention) in PNG. The Hwelembo model also fulfils the WHO/UNAIDS recommendation for comprehensive HIV prevention and for male circumcision to be provided in combination with other behaviour-change interventions. Moreover, the objectives of the new program is underpinned by the same principles as those prescribed by the WHO Ottawa Charter for health promotion.

9.9. Recommendations

The integration of MMC within revived MICs is a relatively new area of investigation. Thus, there are many recommendations that can be drawn from this study. The recommendations provided below are those that I as the researcher and health and community leader (in Yangoru-Saussia) prioritize as key areas for future work in this area of combining culture and biomedicine for HIV prevention.

To keep the momentum of the new initiative, it is recommended that a lead group or committee is formed. This group will be responsible in facilitating the staging of the rites. At the initial stages, this group will work with relevant authorities (including the Yangoru-Saussia District Development Authority) to draft policies and other instruments that will guide the establishment of the new manhood rite in the district. This group could also be the point of contact for any individual or organization that is interested in supporting the staging of the new rites in Yangoru-Saussia.

A key area for research in the future is the effect of the MICs on the initiates' ability to avoid contracting HIV. So far, the discussion on the male rite preventing HIV in initiates has all been theory based. There is urgent need to investigate whether the new program could actually prevent the initiated young men from acquiring HIV. A study in this regard could perhaps follow-up a cohort of initiated young men over a period of time and make comparisons with another cohort of non-initiated young men of the same setting (in Yangoru-Saussia). The new manhood rite would (be said to) have a positive effect on HIV prevention, if less men in the initiated group contract HIV compared to the men in the non-initiated group.

Another key area of future work is to investigate the possibility of establishing a simplified version of the new manhood rite at selected urban centers in PNG. This is because many men and boys relate the foreskin cutting procedure with custom or male initiation and may therefore prefer the cutting of the foreskin to be done through a process that resembles initiation of boys into manhood. In addition, a simplified version of the new rite could contribute in increasing the accessibility of safe male circumcision (to men preferring foreskin cutting) in PNG given that sex (including the male sex organ) is still a sensitive topic and many men and boys could find it more comfortable to undergo foreskin cutting and to talk about sexual matters in a secluded male-only zone.

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Reflections

Medically assisted circumcision: a safer option for initiation rites

Culturally sensitive integration of medical circumcision could avert adverse effects at traditional male initiation rites

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Medical circumcision and the revival of valued traditional practices: An evaluative study in Yangoru-Saussia, Papua New Guinea.



Field Report

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Declaration and rights

The words and expressions contained in this report are that of the author and do not necessarily reflect the views of the named supervisors or that of the sponsors of this project including Australia Awards, James Cook University and Divine Word University. The information presented was done to the author's best knowledge and under the circumstances that prevailed at the data collection effort in Yangoru-Saussia, Papua New Guinea.

All rights relating to the concepts and work provided in this report remain reserved.

Key terms and definitions

Terms	Definitions
Hausman	This term may refer to the structure in which men and boys reside during the initiation ceremony or it may be a general reference to the people as well as the site and structure involved in the initiation ceremonies. In this report, the term hausman is used as a general reference to the initiation ceremonies.
Garamut	The garamut is a drum made from a log (usually of kwila wood) that had its insides carved out into a hollow space. The hollow in that log is responsible for the emission of sound that can travel long distances across the rolling hills, valleys and mountain peaks.
Garamut communication	This refers to the transmission of messages (between villages) using known patterns of garamut beats and rhythms.
Penile splits	This procedure happened at pre-colonial male initiation ceremonies. A pointed cassowary bone was inserted in the penile urethra and forced outwards so as to split open the distal end of penile urethra and allow free flow of blood.
Program Organisers	This term refers to the group of people whose collective effort led to the successful staging of the 2015 male initiation ceremonies. This group of people also collective make up the front-liners of the Yangoru-Saussia Cultural Heritage Program (please see below).
Kwarambu	This term is specific for a spirit house (or haus tambaran) in Belmore and other villages of West Yangoru. The <i>Kwarambu</i> is an enclosed and pointed structure that houses spirit totems including carved statues and masks. In the <i>Numbo</i> dialect, this structure is called <i>Horlombo ka</i> .
Initiation Ceremonies	In this report, this term is a general reference made on the collective activities of teachers, students (initiates) and the host communities towards the transfer of traditional knowledge, skills and values from older generation men to the next generation men.
Culture Schools	In this report, this term is used interchangeably with initiation ceremonies. With modern alterations including medical circumcision and a formally documented curriculum, the initiation ceremonies will evolve into modern culture schools.
Yangoru-Saussia Cultural Heritage Program	This term refers to a temporary working group that was formed to provide leadership for the collective staging of the 2015 male initiation ceremonies. This working group comprised of volunteer individuals and officers from the following organizations: East Sepik Provincial AIDS Committee, Divine Word University (including the author), Yangoru-Saussia University Resource Centre, Yangoru Secondary School and representatives from participating communities.

Executive Summary

Medical circumcision (MC) replaced traditional penile splits at the recent 2015 male initiation ceremonies in Yangoru-Saussia (in East Sepik Province), Papua New Guinea. This alteration to traditional practice presents a unique opportunity both to revive the desirable aspects of local culture and to have an important community point to deal with Human Immunodeficiency Virus (HIV) and other pressing public health challenges including unsafe penile modifications. An assessment of the acceptability and feasibility of this variation to traditional penile splits was done and the results will contribute to the author's PhD thesis and inform health policy on local acceptance and the practicalities of providing safe circumcision to men at initiation ceremonies. Five local communities participated and 45 men were screened for Human Immunodeficiency Virus (HIV) and 40 had complete foreskin removal under hygienic conditions. Apart from two minor, easily managed complications, the outcome of the bush surgery was very positive. On the other hand, the costs and logistics of mobilizing the health team and required medical resources was a significant challenge. Likewise, the initiation ceremonies were staged under difficult circumstances; with the El-Nino related food shortage at its worst and working with funding uncertainties and lack of a well-defined management structure. Nonetheless, the 2015 modified initiation ceremonies were very successful and an executive team is now in-place to oversee upcoming programs.

Between 10-15 communities are expected to register (with required fees) and participate in the 2016 program. This local community effort could do well with a counter-part funding arrangement between a lead sponsor and local participating communities. Travel and logistics were the major cost factors necessitated by lengthy distances between participating communities and program organisers. Apart from the research component, the 2015 initiation ceremonies was entirely funded through the good will of individuals (including the current local member of parliament Hon Richard Maru), participating communities and through fundraising activities. Support for this self-help cultural revival initiative can be expressed through www.facebook.com/yangorusausia or by contacting the author on +67579218090/+61406295102/clement.manineng@my.jcu.edu.au.

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There are many who supported this work. Some provided vehicles, some supported with cash; others gave up their personal time. There were times when the journey became blurry with thick mists of uncertainties and guiding beacons of light would pop up just in time not only to show the way but also to channel a path with required resources and valuable advice. Sometimes, it was just the singing of an old, familiar tune that lifted the heavy souls to lighter, more airy heights. Below are the names of those whose contributions led to the success of the 2015 male initiation ceremonies in Yangoru-Saussia, Papua New Guinea.

Organizations	Australia Awards PNG James Cook University, Australia Divine Word University, PNG PNG National Cultural Commission PNG Department of Trade, Commerce and Industry East Sepik Provincial AIDS Committee Yangoru Secondary School Yangoru-Saussia University Resource Centre	Yangoru-Saussia District Development Authority West Yangoru Local Level Government East Yangoru Local Level Government Numbo Local Level Government South Seas Tuna Ltd Sepik Plain Oil Palm Project Ltd Fam hire Cars Premium Investments Andro Holdings Ltd
Groups	Rhulimbo Corporative Society Boem-Sare Hausman Belmore Culture Group Kumbuhun Culture Group	Huaravri Culture Group Kinienumbohu hausman Avawia hausman
Individuals	Hon Richard Maru (MP) Fr Jan Czuba (President DWU) Prof Maretta Kula Semos (VP DWU) Prof Francis Hombhanje (DWU) Prof Clement Malau (Dean FMHS DWU) Associate Professor Pascal Mischon (DWU) Ambassador Gabriel Dusava (Japan) Ms Maggie Baigry and family (DWU) Mr Emil Trowalle (ESPAC) Mr Jeffery Waffi (EYangoru LLG President) Mr Manu Kanai (WYangoru LLG President) Mr Michael Kombo (Numbo LLG President) Mr Fentson Yaninen (CEO YS DDA) Mr Samuel Pongiura (Principal- Yangoru Sec) Mr Brian Waranduo and family Mr Eric Manasi and family Mr Otto Dusava and family Ms Julieth Baigry and family Mr Roland Kombo Mr Camillus Pais Mr Charles Mr Cephas Wohienen and family Mr Joseph Lekimani Mr Damien Ikombi Mr Richard Parlelau	Mr Moriku Pengkiana and family Mr Vincent Huanje Mr Eric Wangihau Ms Wendy Hevengu Ms Maggie Kivan Mr Simon Pigoru Mr Yuanimba Yinanguie and family Mr Tom Morris and family Mr Patrick Harricknien Mr Renny Pierick and family Mr Moses Warie Mr Desmond Yaninen Pastor Obed Yamasombi Ms Lorraine Manua Mr Ronney Gawi Mr George Manihau Mr Harry Juni Mr Bernard Juni and family Mr Mathew Neimani and family Mr Jack Sahengu Mr Freddy Isiro Mr Cletus Morris and family Mr Graham Wavimbukie and family Mr Johnmark Yinanguie and family Mr Moses Tambala

1. Introduction

The inclusion of medical circumcision at male initiation ceremonies enabled the revival and potential continuity of the desirable traditional practices in Yangoru-Saussia, East Sepik – Papua New Guinea. The re-enacted initiation ceremonies had safer medical circumcision (instead of penile splits with cassowary bones) and the initiation activities restricted to important and valued aspects including dances, *garamut* communication and public speaking. The photo on the cover page shows a student, guided by his cultural leader, confidently demonstrating his newly acquired traditional skill of public speaking at the combined graduation ceremony held on Wednesday 23rd December 2015. Those who witnessed this event did not show any sign of disapproval at the alterations done to the traditional initiation ceremonies. Instead, people were amazed and cheerful when witnessing young men perform traditional acts that were previously thought of as skills that could never be passed down to today's modern generation. The acceptability of these modifications and the feasibility of performing medical circumcision at initiation ceremonies were assessed over the course of the new culture program.

For the 2015 modified male initiation ceremonies in Yangoru-Saussia, five communities comprising 112 men (students and teachers) participated. Forty five (45) of these men had HIV counselling and testing and 40 received medical circumcision. The timing did not seem right. The El-Nino dry weather was at its peak and local gardens could not support the food requirements. Furthermore, the culture program did not have an official sponsor and management team. Despite those short-comings, the program organizers were determined to at least make a start somewhere using the resources and support that was available. Help came from many organizations, groups and individuals as can be seen from the acknowledgement list. Publicity to solicit support included billboards along the Sepik Highway; announcements on the local radio (Radio East Sepik –*neck blong Sepik*), newspaper advertisements; email and phone communication and a facebook page dedicated to this program- www.facebook.com/yangorusausia. Fundraising activities included sale of printed T-Shirts; sale of donated fish (tuna) and a fundraising dinner at Port Moresby's Lamana Hotel. All funds generated from these activities as well as contributions from individuals met the costs involved including logistics, contribution to teachers' fees and the deployment of medical team.

The medical team was engaged specifically to provide medical circumcision and to counsel and screen the participants for Human Immunodeficiency Virus (HIV). The medical team also provided stimulating talks on other pressing public health issues including penile modifications (injections/inserts), teenage and unwanted pregnancies and challenged the participants to avoid or limit the use of behaviour altering substances including homebrew and marijuana. This medical intervention occurred on the first week of initiation so that the wounds (from cuts on penile skin) had ample time to heal before the participants engaged in vigorous activities (e.g. singing and garamut beating) towards the ceremonies end. The practicality of providing medical circumcision under aseptic conditions was assessed during the process. Aspects of assessment include costs, hygiene techniques, wound-healing and post-operative complications.

Like many first-time projects, the modified male initiation ceremonies had a slow start. There were many fence-sitters and people who wanted some convincing before they take up the challenge. The vibrant display of the learnt traditional skills at the combined graduation erased the doubts among those who attended and many people are now organizing themselves to join the new culture program from 2016 onwards. However, experience from the 2015 initiation ceremonies dictates that interested communities be screened for eligibility. Eligibility will include number of participants (between 20-30), availability of culture teachers, exclusion of undesirable practices (such as sorcery and witch-craft) and cost sharing including the full payment of the required student (initiate) fees.

Due to the slow start, some aspects of the research component did not eventuate as expected. The major quantitative component – observational comparative study – had to be deferred due to insufficient number of eligible participants. Most of the 2015 participants were older men whose age places them outside the eligibility criteria. The 2016 initiation ceremonies will be better organized and participation of younger study-eligible men is expected to be high. Hence, this study could fulfil the quantity requirements if data collection is allowed to be continued into 2016 and 2017. In the meantime, some data analysis will be done and manuscripts can be generated from the data collected to date and the PhD work can now shift into thesis compilation phase.

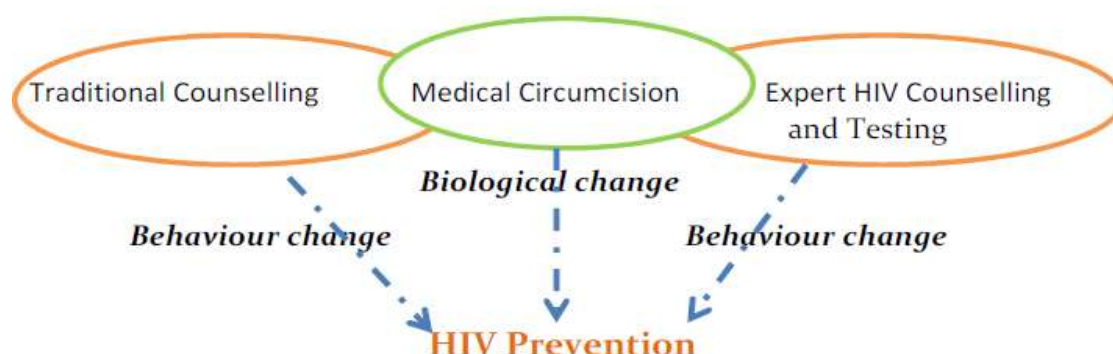
The ensuing pages expand on the information provided in this introduction, beginning with the anticipated achievements on public health and cultural preservation. Other sections include; staging the initiation ceremonies; the combined graduation ceremony; fundraising activities; an expenditure report; what lies ahead; and a revised time-line.

2. Public Health – Anticipated achievements

The traditional initiation ceremonies present an important community point for public health intervention addressing cross-sectoral challenges including HIV, Gender, men's health, substance abuse and family planning including teenage and unwanted pregnancies. Every morning at 4 am (starting from the morning following medical circumcision), the participants were offered words of wisdom and challenged to overcome the barriers to good health and individual and community prosperity. Participants were warned about the death trap of HIV/AIDS and stories of the damages done by alcohol and marijuana abuse were told with distaste so it serves as a deterrent for participants' future involvement with drugs and alcohol. In addition, men were encouraged to take pride in their bodies and refrain from harmful body modifications including penile injections and inserts. Moreover, participants were warned that teenage and un-wanted pregnancies will only serve as barriers to personal development and that women must be respected and given their space to achieve equal participation in life activities. It is possible that the participants will not easily disregard the pre-dawn counsels because the same warnings –heard on day one –was repeated every day for the duration of the initiation ceremony.

Apart from the 4 am counselling sessions, HIV intervention had two other activities that reinforces its future adherence. The professional HIV counselling and testing is expected to effect a HIV conscious attitude among the participants and medical circumcision provides a proven degree of protection (up to 60%) against HIV transfer from infected women sex partners [1]. The modified initiation ceremonies therefore presents a three in one package for HIV prevention as shown in the diagram below.

Figure I: The three in one package for HIV prevention through male initiation ceremonies in Yangoru-Saussia.



Current HIV prevention places emphasis on high risk groups including sex workers and on Prevention with anti-retroviral treatment. Our work, through this culture program targets young man with an intervention that may steer those young men away from high risk (of HIV infection) activities including sex with multiple sex partners. Medical circumcision is obtained more or less for personal hygiene and as an alternative to the traditional penile splits. However, should the participants engage in high risk activities, the biological change with medical circumcision can confer some amount of protection as shown from randomized controlled trials conducted in Africa [2, 3].

3. Cultural preservation: Anticipated achievements

The successful staging of the five initial initiation ceremonies sparked up excitement for a cultural revival through-out the Yangoru-Saussia district and elsewhere in East Sepik Province. In 2016 (this year) few more communities will join the initial five to host initiation ceremonies and participation at each ceremony is expected to be high now that the ceremonies are made safe with the inclusion of medical circumcision and also for the demonstrated fact that the undesirable crafts (witch-craft and sorcery) are excluded from the program. This essentially means that the Papua New Guinea authorities and leaders are looking at a genuine effort of cultural preservation. Cultural knowledge that remains in the minds of the few elderly people can now be transmitted to young people through the modified initiation ceremonies. The unique traditional songs, dances, stories and arts and crafts can now be expected to be conserved in the minds of the participating students for many generations down the line.

In contrast to initiation ceremonies, cultural festivals are one-off events which most often focus on money as the motivating factor. The initiation ceremonies on the other hand are structured month long programs that will thrive on the need to preserve cultural identity and the hope of re-establishing sound moral and ethical values contained in the traditional value system. A driving force other than money implies that the objective of cultural preservation may not actually require substantial funding. Revival of desirable local cultural practices is really a local interest that communities are willing to contribute and support in their own ways. What is important therefore is not huge amounts of money but leadership – a focal point from which the local people can converge and contribute resources and abilities to advance the common agenda to preserve local culture. The success of the 2015 male initiation ceremonies could be attributed to such a leadership (focal point leadership). The research project served as that focal point and contributions (in time, labour, money and transport) came from many individuals, communities and organizations as can be seen from acknowledgement list. Following the first initiation ceremonies, an executive team has been formed to continue providing that focal point leadership so the annual staging of the initiation ceremonies in Yangoru-Saussia can be sustained. Through this sustained cultural program, Yangoru-Saussia district now has a genuine opportunity to preserve its cultural heritage which otherwise would be lost in the swift moving tide of modernization.

4. Staging the modified male initiation ceremonies

The much awaited initiation ceremonies were finally staged from 23rd November to 23rd December 2015. The Yangoru-Saussia Cultural Heritage Program in communication with persons at each hausman or culture school decided on the start and end dates and circulated a program guide. Each culture school based their teaching on that program guide (See attached). The first week (of the 4 week program) was for medical circumcision and each of the 5 participating culture schools were allocated 1 complete day for medical circumcision.

On the specifically allocated days and in the cover of darkness, engaged local public motor vehicles (PMVs) transported the initiates between the centrally located operating centre and their culture schools. The initiates' movements happened at night to blend the new culture program with the secrecy of traditional initiation ceremonies. Following the circumcision procedure, the initiates abstained from food and water until they have ingested a special herbal preparation in the morning of the next day. The special herbal preparation was given to open up the initiates' minds allowing them to catch the cultural teachings faster. The next three weeks was secluded cultural teaching and learning.

Both culture leaders and student participants resided within the initiation grounds and had scheduled lessons from the break of dawn to 10 o'clock at night. In accordance with local custom, meals for both students and teachers were prepared by elderly non-menstruating women. While the initiation ceremonies were in progress, the program organizers visited each culture schools on two occasions to ensure that the restrictions (on sorcery and witchcraft) were observed and to encourage the schools to adhere to the program schedule.

4.1. Teachers and students: Participants of the initiation ceremonies

Today, the authority in traditional knowledge and skills rests with an alarmingly few elderly men and women. Many older men (and sometimes women) in the community have some knowledge and skills in culture matters but only about one or two have the depth and scale to be considered as an authority of local culture. Many participants of the transpired initiation ceremonies were men under the teacher/student category. These men had expertise in some cultural subjects but were weak in other areas and therefore became teachers and students concurrently – teaching known cultural subjects –and at the same time learning from men who had expertise in other areas of local culture. Consequently, many young men were discouraged from participating when they discovered that they were going to share things and live in close quarters with older men, some of whom had allegations of sorcery and witch-craft labelled against their name. Hence, only a handful of study-eligible men participated and limited the numerical strength of the observational comparative study. Data collection could be

extended to 2016 initiation ceremonies to allow the recruitment of additional participants.

4.2. Medical circumcision and HIV Counselling and Testing

Medical circumcision was provided replacing the unsafe traditional penile splitting procedure. Before medical circumcision, the participants underwent individual HIV counselling and testing with the intention that the operators will be alerted to participants' HIV status so as to self-protect from HIV and to assist the positive participant to find and use available help.

4.2.1. The medical circumcision procedure

Once tested for HIV, the participants had their consents signed and lied supine on the makeshift operating tables (x2). The perineum, surrounding thigh (left and right), scrotum and the penile head and shaft was washed down with povidone iodine and draped. Penile block was done by infiltrating 5-10 millilitres of 1% plain lignocaine all around the base of the penile shaft. Once fully anesthetized, the uncut or partially cut foreskins were completely removed with a tissue scissors. Bleeders were identified and clamped with artery forceps and later tied off either with a tie stitch or were stitched off together with the skin. After managing bleeders, the inferiorly retracted skin was pulled up, aligned and sutured to the skin on the superior end of the penis using 30 vycril stitch. Then the wound was washed with povidone iodine and had a special ginger-soaked gauze wrapped around it before dry gauze and bandage were applied. For pain relief, Panadol was supplied with instructions to take 2 tablets (1 gram) immediately and then take 2 tablets every 6 hours. The wound and dressing was to be kept dry and change of dressing was done on day 3.

4.2.2. Number of circumcisions and HIV tests done

A total of 45 men went through the make-shift surgical theatre and all were tested negative for HIV. Out of the 45 men, 40 actually underwent medical circumcision. Five young men had injections that swelled the skin all around the penile shaft and down to the scrotum. These men were refused surgery and advised to seek help at the provincial referral hospital (Wewak General Hospital). Of the 40 men that received circumcision,

17 had fully intact foreskins, 20 had straight cuts and 3 men had inserts attached on their foreskins.

4.2.3. Complications

There were only three complications, two directly related to the procedure while one happened largely as a manifestation of an underlying anxiety disorder. One participant had blood soaked dressing 20 minutes after surgery. The blood soaked dressing was removed and light pressure applied on the wound for a few minutes before new dressing was applied. Another participant reported pain and swelling around the wound on the ventral aspect of the penile head on day 3 post operation. Management included regular Panadol (2 tablets taken every 6 hours) and Amoxicillin (1 capsule of 500mg taken every 8 hours). In addition, this person's movement was restricted and when lying down and sleeping, the 'head down-bottom up' position was recommended. The swelling and pain subsided soon afterwards.

The third complication was an excellent test on the team's ability to deal with a medical emergency. A participant 23 years of age collapsed about 20 minutes following surgery. A diagnosis of anaphylactic shock was uppermost in the list of possibilities. However, the vital signs (Blood pressure, pulse rate and respiratory rate) were within normal ranges. Nonetheless, an intravenous access line was established and patient placed on the recovery position to maintain a patent airway while the vital signs were being monitored. The patient became fully alert after 10 minutes and the operating team reached the conclusion of a fainting episode associated with an underlying anxiety disorder. Counselling and assurance was provided and all was well since.

4.2.4. Instrument sterilization

The instruments used were sterilized on site. All used instruments (forceps, scissors, kidney dish etc.) were washed with soap water, rinsed (with clean water) and placed inside the pressure sterilizers. A small amount of water was added and with the lid closed, brought to boil over and open fire. The steam-heated instruments were then left to cool before they were sorted and packed as standard trays for medical circumcision.



*Top Left: The operating theatre. Front end: waiting area. Black plastic separates operating room
 Top Right: Individual HIV counselling and testing prior to medical circumcision
 Bottom Left: Medical circumcision in progress at the make-shift operating theatre
 Bottom Right: Steam sterilizer in operation over an open fire.*

4.3. Pre-dawn words of wisdom

In the early morning hours following medical circumcision, the participants were introduced to the 'pre-dawn traditional counselling' sessions. At 4 am (signalled by the high pitched sound of the bush fowl), the participants were awakened by the sound of soft patting rhythmically applied (by culture leaders) on the sago thatched roof of their sleeping quarters. Some participants sat up while others laid on their mats and listened as the most reputable cultural leader offered his words of wisdom. Participants were told –in a provocative way – about rules and regulations and acceptable standards of behaviour. Marijuana and alcohol consumption was strongly opposed and participants were encouraged to make meaningful contributions to society either through education or as a leader and active member of their respective local communities.

At day break (on the same day), special herbal preparations (*Ningi-Panguie*) were prepared and brought to the occasion. The participants each held K50 notes and

presented those notes to the culture leader who provided the sacred herb. For his part, the culture leader presented each participant with the sacred herb and received K50 notes in return. When receiving the K50 notes, the culture leader waved the money around the participant's head, patted him gently on the chest and gifted the participant with expressions of positive individual growth and development. Members of the medical team joined this counselling session and provided very practical advice on sexuality (including penile injections), gender issues, family planning and population control and HIV/AIDS. This traditional counselling (excluding the ingestion of herbs) continued every morning at 4 am right up to the graduation day.



Above: Participants of the Rhulimbo Hausman munch on their sacred herb and listen to counselling from culture leaders

4.4. Research activities during initiation ceremonies

The researcher (Clement Manineng) was based at Rhulimbo which was the agreed operational base for the medical team. A pre-designed 'descriptive study form' was used to write down the description of the setting at which medical circumcision was taking place. Copies of another pre-designed descriptive study form were used to record the

details of every circumcision procedure. Two officers performed the operations with help from two assistants. The researcher, as a qualified and practicing clinician, was one of the two operators because without the researcher's help, the medical team would be reduced to a single operator and this would have a negative impact on the overall program's timeframe. Therefore, the researcher performed circumcisions and did data collection at the same time. At the end of each circumcision procedure, the researcher un-cloved and immediately filled the details of the operation on the data collection form. The other officer, who was about an arm's length away (from the researcher's operating table), made mental notes of the required details and supplied those details to the researcher at the end of each of his operations.

Data collection for the observational comparative study was attempted at Rhulimbo soon after the start of initiation ceremonies. The eligible participants were first gathered at one spot and informed about the research. Each participant was then provided with the relevant study information sheet to read and decide on whether to participate or not. Those who were willing and able to participate proceeded to sign the consent form and self-administered the questionnaire. When the forms were re-gathered, a name list of study participants was drawn and a number (in ascending order) was assigned to each name. Next, individual names with assigned participant numbers were written on a small piece of paper and given to respective participants. The participants then identified their filled questionnaires (by their own hand writing) and wrote their newly assigned numbers on the section marked 'participant number'. At the 6th month follow up (in June 2016), the participants will write the same participant number on the follow-up study forms enabling the comparison of information provided at pre and post initiation ceremony. This was a neat arrangement for maintaining anonymity among participants. However, the circumstances surrounding the researcher at that time impeded data collection (for the observational comparative study) at other locations or initiation ceremonies.

Some interviews with community leaders (5) took place during the initiation ceremonies. Appointments were made with individual leaders for a convenient date and time for the interview to take place. The culture leaders were approached on the

appointed time (and date) and a verbal participating consent was rendered prior to the interview and the consent and the interview was recorded using a digital voice recorder. The recorded interviews are now being transcribed and quantitative data is being cleaned and entered into Microsoft Excel in preparation for analysis using SPSS statistical software. Both quantitative and qualitative data analysis will be done as soon as the collected data are entered, cleaned and sorted into respective files and storage folders.

5. The combined graduation for initiation ceremonies

The graduation for the initiation ceremonies (or culture schools) were combined in order to save costs and to have the public and interested individuals and groups witness the results of the culture program. Local PMV trucks were engaged and provided transport on the day. All initiation participants together with their teachers, culture leaders and interested members of their communities gathered at the graduation venue, Rhulimbo. At Rhulimbo, each hausman (or culture schools) had specific areas allocated to them from which to prepare themselves for the public display. The graduation arena had a beautifully decorated stage and next to it was a similarly decorated hut that contained four garamut drums. The demonstration on public speaking and traditional dance and *singsing* happened in front of the stage where the official guests were seated.

Guest invitations for the occasion included the local MP and the four LLG Presidents. However, it was the Christmas eve and many invited guests were not able to attend. The local MP provided his apology and the Chief Executive Officer of Yangoru-Saussia District Development Authority (DDA) attended in his stead. The principal of Yangoru-Secondary School served the occasion as master of ceremony. Guests who attended included President East Yangoru LLG, Deputy President West Yangoru LLG, Representative of Numbo LLG, a prominent National Human Rights Lawyer – Mr Patrick Harricknen and Mr Emil Trowalle (Coordinator – East Sepik Provincial AIDS Committee).

The ceremony started with a traditional welcome rendered by the host hausman – Rhulimbo. The guest speakers spoke highly of the local culture and the values by which

local cultural practices can help to mitigate some of today's social and health challenges. The guests and the crowd were entertained by the public demonstration of the learnt cultural skills. During his speech, the CEO of Yangoru-Saussia DDA assured the program organizers and the public about the local MP's support and the support of Yangoru-Saussia DDA. He further re-enforced the local MP's support and invited the program organizers to make a submission to the District Development Authority early in 2016 so the district can allocate an amount to this culture program in its 2016 budget.

Among the cultural demonstrations, the public was particularly impressed by the *garamut* communication. Young men were able to accurately communicate messages by beating rhythmic patterns as instructed by the *garamut* experts. People were also amazed by the ability of selected young men who demonstrated their public speaking skill. The graduation ceremony ended with a traditional farewell beat of the *garamut* drums. The opening and closing prayers were offered by a senior pastor of the Seventh Day Adventist Church. Official certificates of recognitions will be issued after monitoring the participants over a 6 month period to ensure that they (participants) adhered to the statutes of the initiation ceremonies and also to ascertain there is continued practice of the learnt cultural skills in the communities.



Above: The public witness the young initiates demonstrate their garamut beating skills at the combined graduation ceremony.

6. Resource mobilization for initiation ceremonies

Resource constrain was by far the biggest challenge for the initiation ceremonies especially at a time when El Nino dry weather was at its peak in Papua New Guinea. Program organizers had to solicit extra funds to cater for food shortages caused by the dry weather. Letters requesting financial and in-kind support were written to various business houses and administrative and political offices in East Sepik Province. A fundraising dinner and dance were organized for Port Moresby and Goroka respectively. Results from the letters and dinner/dance did not work out as expected. The descriptions of the fundraising and resource mobilization initiatives are provided here.

6.1. Logistics

Five (5) communities participated in this (2015) round of initiation ceremonies and travel between those five communities and the Administrative centre –Wewak, required a reliable off-road vehicle with adequate supply of fuel. The program did not have

enough funds to hire a vehicle for 4 weeks and Limawo Holdings – an oil palm company in East Sepik Province – pledged to take on that responsibility. However, about one week before the start of ceremonies, changes to the company hierarchy made it impossible for the company to honour that commitment. The fall-back plan was to use the East Sepik Provincial AIDS Committee (ESPAC) vehicle but that 10 seater was also fully committed to ESPAC's administrative runs. Seeing this, a cheap vehicle was arranged on an as needed basis. At the final stages, the program was honoured to have a hired 10 seater land cruiser sponsored by the local Member of Parliament Honourable Richard Maru.

6.2. Human resource

This initiative to organize and stage the initiation ceremonies (or culture schools) in Yangoru-Saussia has and is largely being done by volunteers. Not one person was or is engaged or fully paid by the culture program that is now called Yangoru-Saussia School of Culture and Ethics. Officers and volunteers from the East Sepik Provincial AIDS Committee participated in the program as part of their job description to prevent HIV and the author (Clement Manineng) and officers of Divine Word University got engaged in the program as part of their community engagement and research work. Other people involved themselves not for money but for an opportunity to contribute to a genuine revival of the valued aspects of local culture. Human resource is therefore a priority agenda for the culture program. There are many persons who are capable and very willing to serve the program but without some justifiable allowances, it would be unethical to officially recruit people to run the program.

As a start, the program delegated some responsibilities to a volunteer and provided some allowances for those responsibilities. However, due to lack of funds and supervision difficulty, that short term engagement was withdrawn. In addition, the delegation of the fundraising responsibility especially for the Port Moresby event was necessary to allow for lead organizers to concentrate on the initiation ceremonies. The program was able to provide some allowance for the fundraiser volunteer in the hope that the money will be adequately recovered by the fundraising events. However, the fundraisings did not draw as much funds as expected and the fundraising responsibility

had to be withdrawn from the volunteer until the program receives or generate enough funds to adequately compensate people for their services.

6.3. Fundraising: Port Moresby dinner event

A dinner event was staged in Port Moresby's Lamana Hotel not only to raise funds but also to raise awareness among the Port Moresby -based Yangoru-Saussia community and the general public. A volunteer officer was engaged on a temporary basis and flown to Port Moresby (from Wewak) to organize the event. However, organizing the dinner event in Port Moresby was not as easy as it had seemed. It was far more expensive and the traffic jam made it impossible for invite letters to promptly reach as many people and organizations as was necessary. In addition to the volunteer fundraiser, the program sponsored the return trip of two culture leaders who led the traditional song and dance , entertaining guests during the fundraising event. Another culture leader supported the dinner event by sponsoring his own way to Port Moresby.

A fair number of people attended the event and contributed meaningfully both with cash and supporting comments. Dr Jacob Simet, Director PNG National Cultural Commission mentioned that he was impressed particularly with the scale at which this program was being organized. Local MP Richard Maru supported the program and requested organizers to provide a detailed submission to Yangoru-Saussia District Development Authority for their consideration in the 2016 Budget Meeting. The dinner event raised K21,200 in cash, cheques and pledges. However, most of the pledges still remain outstanding. All funds raised supported the initiation ceremonies including the combined graduation event.

6.4. Other fundraising activities

Apart from the Port Moresby Dinner event, the program had two other fundraising activities. A fundraising dance in Goroka (Eastern Highlands Province) raised K1,400. Unfortunately, this money was lost to an unplanned and unauthorized fundraising event. Forty betelnut bags, while being shipped to Lae were all lost at sea when the boat carrying the cargo capsized in the rough waters between East Sepik and Madang.

In addition, the group had an ongoing sale of printed T-shirts at K25 per shirt. A total of 100 T-Shirts were printed and distributed. However, a good number of those shirts were given away free-of-charge for promotional purposes. About K1000 (profit) was raised through this initiative. The program was also fortunate to have been given 500 kilograms of fish (tuna) by the South Seas Tuna company operating in Wewak, East Sepik Province. The logistics of trying to organize and sell this large amount of fish was quite challenging. Eventually, the fish was divided into 12 bags and distributed among the program organizers. K1,200 was raised and an estimated K600 remains outstanding.



Above Left: The dinner event at Lamana Hotel, Port Moresby, Papua New Guinea

Above Right: Traditional song and dance entertaining guests at the dinner event.

6.5. Medical team, equipment and supplies

Letter of request for the involvement of medical personnel in the province was given to respective authorities –Senior Health Advisor, East Sepik Provincial Health and Director Medical Services, Wewak General Hospital. Although the response was favourable, medical personal from the Hospital and Provincial Health Divisions were not able to join the program because most staff went on leave (for the Christmas shut-down period) and the remaining medical personal needed to man the hospital and other health facilities in the province. Despite this shortage of medical personal, Maprik District Hospital was able to support the program with an experienced male Community Health Worker (CHW) and the program also received support from a volunteer Nursing

Officer. These two officers organized the necessary equipment and supplies from government pharmaceutical supplies and set up the operating facility. HIV Counselling and Testing was provided by a trained HIV worker attached with the Sepik Centre of Hope.

The program organized logistics for the medical team and provided an allowance at the rate of K100 per officer per day. Equipment used included surgical trays (packed with surgical instruments – tissue forceps and scissors etc.), pressure sterilizers and head lamps. Supplies included gauze pads, plasters, syringes, sutures, povidone iodine, surgical gloves, lignocaine, anti-biotics (Amoxicillin) and emergency drugs and instruments. Medical circumcision was done by the experienced CHW and the author.

6.6. Land and ceremony houses

The program did not have any issues with land and the ceremony houses. It was up to the local communities to erect and maintain their own ceremony houses on their own lands. However, the program did make some contribution for the mobilization of local materials and labour to erect ceremony houses. Contributions to each hausman (or what is now called culture schools) included nails and some amount of store and garden food.

There are two types of ceremony house in Yangoru-Saussia. The hausman (others call it hausboy) is a spacious and open structure designed to host as many people as possible. The haus tambaran (or Kwarambu /Horlombo ka) is an enclosed pointed structure designed to accommodate spirit figures (carved statues and masks) and to host only a handful of visitors at any one time. The 2015 round of initiation ceremonies were convened in the hausman structures.

The *Belmore* and *Huaravri* communities were not able to join the 2015 initiation ceremonies because their ceremony houses needed some more time before completion. These ceremony houses are now complete and Belmore and Huaravri communities are expected to join the 2016 initiation ceremonies. The Belmore culture group went a step further to build and officially open a beautifully adorned haus tambaran. At the opening

ceremony, the Belmore elders insisted for change of terms from the incorrectly used 'haus tambaran' to the most suitable and acceptable term, 'Kwarambu'. *Kwarambu* is said to be the house of good spirits as opposed to the 'haus tambaran' which carries the perception of a link with bad spirits. In the Numbo dialect, this beautifully decorated spirit house is called *Horlombo ka*. For those who would like to experience the Yangoru initiation in its pure form (unmodified), the Belmore culture group will be staging one in the near future. For information on this event, please contact the author.

6.7. Political and District Administrative support

Engaging the district political and administrative authorities into meaningful discussion about the local cultural program was a considerable challenge. Numerous invitation and informative letters and reports probably never even reached the intended readers due to reasons including political opposition. Many people have been quick to categorize the new culture program as another political tool for the sitting member and thus became apathetic to all matters concerning the local culture program. Others became unconcerned thinking that the culture program was another development aimed at challenging the sitting member in the 2017 national elections. Both lines of thinking were not helpful for the program and many people decided to take the wait-and-see approach.

However, program organizers managed to have a number of face-to-face meetings with the local MP (Hon Richard Maru) and the Chief Executive Officer of Yangoru-Saussia District Development Authority (Fentson Yaninen) on different occasions and both leaders committed support with some caution. There were concerns about the revival of sorcery and witchcraft and strong resentment on the possibility of highly inflated charges by culture groups and program organizers. Furthermore, the District Administration requested the culture program to embrace the district policy on 'Early Childhood Development' before the District can facilitate support.

The concern about the revival of sorcery and witchcraft were dispelled at various promotional meetings particularly at the Port Moresby dinner event and at the opening of the Belmore ceremony house (*Kwarambu*) where the local MP was the official guest

of honour. Program organizers clearly explained that the new initiation ceremonies (which are now organized as culture schools) will not allow the revival and or practice of the un-acceptable crafts. Rather, the new culture schools will concentrate on the positive aspects with emphasis on the 'Garamut Communication' (something unique only to Yangoru-Saussia), Paiye-Nangri (Public Speaking) and 'Lomo-Hangu' (Singsing and Dance). After those informative sessions, the local MP publically announced his support and invited the culture program to provide a comprehensive submission to the Yangoru-Saussia Development Authority so the district can provide considered support to the culture program from 2016 onwards.

The culture program also received support from the four Local Level Governments (LLG). Except for President Sausso LLG, the other three Presidents were very keen to support the culture program with cash and kind. Together, the Numbo, East Yangoru and West Yangoru LLGs assisted the culture program with K7000. The Sausse LLG President was hesitant to support because of his stance to oppose the current local MP and also because he could not get along well with certain individuals already heavily involved in the culture program.



Above: Local MP Hon. Richard Maru (3rd from left) with culture and community leaders at the official opening of the Belmore Kwarambu Culture Centre 18th December 2015.

7. Dr Jacob Simet (National Cultural Commission) visits Culture Schools

The PNG National Cultural Commission had taken a keen interest in the culture program in Yangoru-Saussia following the exposure at the fundraising and awareness dinner event in Port Moresby. While attending to family matters at Kwahuie village, Yangoru, Dr Jacob Simet (Director – PNG National Cultural Commission) and wife visited two culture schools to see for themselves the culture events that were being promoted by the then Yangoru-Saussia Cultural Heritage Program. Dr Simet acknowledged and thanked the organizers for their effort in preserving local culture and adding value to Papua New Guinea's rich cultural diversity. On the part of the Commission, Dr Simet announced that the PNG National Cultural Commission undertakes to engage an officer to officially document the Yangoru-Saussia culture to assess the level of traditional knowledge in the district. Dr Simet also encouraged the program organisers to structure the program and get official registration from PNG Investment Promotion Authority (IPA) to allow for organizations to better support the culture program. The cultural schools farewelled the Director and wife with a traditional song and a departing *garamut* beat.



Above: Dr Jacob Simet (Director PNG National Cultural Commission) speaks to culture leaders at Rhulimbo Culture School

8. Administrative organization of the culture program

The 2015 initiation ceremonies were staged under the Yangoru-Saussia Cultural Heritage Program which did not have an organized administrative structure. On 20th December 2015, the program organizers, culture leaders and representatives of the participating communities met at the Rhulimbo hausman and elected an executive team to lead the culture program from 2016 onwards. Mr Emil Trowalle of the East Sepik Provincial AIDS Committee was elected as the chairperson, Mr Samuel Pongiura (Principal – Yangoru-Secondary School) as deputy chairman, Mr Roland Kombo of Numbo LLG as secretary and Mr Eric Manasi of East Yangoru LLG as Treasurer. It was agreed that lead organizers of all hausmans in Yangoru-Saussia will automatically become representative members on the executive team. The author (Clement Manineng) was assigned the role of chief fundraiser and advisor to the executive committee.

The newly formed executive committee was challenged to fast-track the group's registration with Investment Promotion Authority (IPA) and to mobilize support and resources for the continued annual staging of the male initiation ceremonies. In accepting the responsibility of chairmanship, Mr Emil Trowalle thanked the gathered leaders and vowed to progress the cultural revival initiative with strong leadership and structured organization of the group's activities. The gathered group agreed that for 2016 initiation ceremonies, communities opting to join the combined culture program must first register their interest by full-filling the requirements specified by the executive committee. One such requirement is the payment of a registration fee to the central coordinating body that will operate under the name Yangoru-Saussia School of Culture and Ethics.

9. Project finances and expenditures

The tables and descriptions below provide information on the funds received and generated as well as how those funds were expended. The figures are rounded off to the nearest hundredth to enable easier calculations and neater presentation. Some comments on the project finances are provided after table 3.

9.1. Income

Table 1: Sources of income

Sponsors	Amounts
Divine Word University, Office of the President	K25,700
Divine Word University, Office of the Vice President Research and Post Graduate Studies	K25,000
Port Moresby Fundraising Dinner	K16,200
Honourable Richard Maru	K2000
Premium Investments (Renny Pierick)	K1000
Andro Holdings Ltd (Moses Warie)	K500
Fam Hire Cars (Moses Tambala)	K500
Printed T-shirt Sales	K2500
Fish (Tuna) Sales	K1,200
East Sepik Provincial AIDS Committee	K2500
Private Individual Sponsor	K20,000
Private Individual Sponsor	K15,00
Total Monies Received	K115,100

9.2. Expenditure

Table 2: Expense Items

Expense Items	Amounts
Research (2 years, 2014-2015)	
Travel Tickets	K15,000
Mobility (Vehicle and Fuel)	K21,00
Incentives	K500
Research Assistant	K3,000
Transit Accommodation	K9,000
Printing	K500
Equipment (Digital/Video Camera)	K3,000
Total Research Spending	K52,00
Port Moresby Fundraising	
Travel Tickets	K4,000
Organizer Assistant	K2,000
Catering Service (Lamana Hotel)	K12,00
Venue Hire (Lamana Hotel)	K1,500
Total spending for Dinner	K19,500
event	
Plain T-Shirts and Prints	K1,500

Initiation Ceremonies		
Subsidy for Food (El Nino period)		K5,000
Subsidy for Labour		K5,000
Transport (PMV Hire)		K5,000
Medical Personal		K3,000
Operational base for medical team		K4,000
Promotion (Billboards and Advertisements)		K9,000
Communication		K500
Belmore Culture Centre		K1,000
Huaravri Culture Centre		K300
	Total spending for initiation ceremonies	K32,800
Graduation Ceremony		
Transport (PMV Hire)		K4,000
Admin Vehicle Hire		K3,000
Refreshments		K1,000
Banner		K1,000
	Total spending for Graduation Ceremony	K9,000
Total Expenses		K114,800

9.3. Other contributions

Some contributions were made directly to individual participating communities or hausmans and therefore cannot be reported under the central organizing program. These other contributions are shown on the table below.

Table 3: Contributions to individual hausmans or participating communities

Contributor(s)	Recipient(s)	Amount
Numbo LLG	Kinie-Numbohu hausman	K3,000
West Yangoru LLG	Kumbuhun Hausman Rhulimbo Hausman	K1,000 K1,000
East Yangoru LLG	Rhulimbo Hausman Huaravri Hausman	K2,000 K400
Yangoru-Secondary School	Huaravri Hausman	K2,500
Fentson Yaninen	Rhulimbo Hausman	K1,000
Rhulimbo Corporative Society	Rhulimbo Hausman	K4,500
Richard Parlelau and Group	Boem-Sare/Nindipole Hausman	K1,000
Damien Ikombi and Group	Kumbuhun Hausman	K800
Ronney Gawi and Group	Avawia Hausman	K500
	Total Contributions	K17,700

9.4. Comments on Expenditure

The research component of the culture program was funded by Divine Word University totalling K50,700. The culture program on the other hand, did not have funding and this presented a considerable challenge to the program organizers. According to a survey conducted from 2009 to 2011, the local people of Yangoru-Saussia wanted a revival of the initiation ceremonies and many people sounded ready to commit time and resources [4]. However, a lead sponsoring individual or group was necessary to pull together available resources from interested persons and groups in order to accomplish the planned cultural revival and preservation program. Hence, the program organizers formed the Yangoru-Saussia Cultural Heritage Program and individuals either contributing from their own interest or representing their organizations/institutions and communities and families worked together and met the necessities for the successful staging of the 2015 initiation ceremonies. The program component of the culture program was therefore funded (total K61,800) and resourced through the good will and support of the many people who still have interest in the values and opportunities embedded in local traditional culture.

Most of the research funds was expended on travel between James Cook University (where the researcher is undertaking PhD studies) Cairns campus (Australia) and Yangoru-Saussia -the research data collection site- through Wewak, East Sepik Province (Papua New Guinea). Hire of vehicle was another very costly expenditure (K800 per day) but one that was essential for mobility between communities staging initiation ceremonies. The researchers' regular trip between Cairns and Wewak was obligated by the limits set by Australia Awards Scholarship to stay no longer than 12 months outside Australia during the period of scholarship. Furthermore, the researcher and program organizers needed regular face-to-face interactions with participating communities in order to maintain the confidence required to advance the program through the many stages from planning to implementation.

Most of the spending was specific to the items and more or less equal to the amount estimated in the original research proposal. The purchase of a digital/video camera,

however, was not specified in the initial proposal. This purchase was necessary for high definition photos and video clips that are going to accompany the project reports and proposals for future funding and collaboration with state and other partner organizations and individuals. Furthermore, the cost of mobile phones was included in the original proposal but mobile phones were not needed at the actual data collection so the money was put into other use.

The initiation ceremonies (including the combined graduation) used up K41,800. Again, transport was the most costly item at K12,000, followed by promotion and contributions for food and labour. The program was obliged to make a contribution for food and labour to each hausman because the initiation ceremonies were being staged in the middle of the El-Nino dry period and food shortage was at its worst. The food and labour contribution of K10,000 (total) would not have been required had the usual weather prevailed. Promotion of the approaching initiation ceremonies was necessary to raise awareness as well as to provide a direction for interested persons or groups to work towards the ultimate goal of cultural revival and preservation. K9,000 was expended on program promotion. The advertisements in the National Newspaper cost K6,000 and the two billboards along the Sepik Highway (at *Japarakua* and *Rhulimbo*) were erected using K3,000.

The medical component of the program required K7,000. K4,000 was used to build the medical team's operational base comprising a 2 bedroom house for accommodation and a hut for performing the medical circumcision operations. The medical personnel (excluding the author) were given allowances totalling K3,000. Medical equipment (operating instruments and pressure sterilizers) were provided by East Sepik Provincial AIDS Committee at no costs and other supplies (gauze, syringe, lignocaine etc.) were obtained free of charge from government supplies.

The Port Moresby fundraising dinner at Lamana Hotel was a great effort considering the difficulties of Port Moresby city. An assistant was engaged and given the responsibility to stage this event. Mobility around the city was difficult and many people of Yangoru-Saussia were not informed about the fundraising dinner event. Further, many people had

late information and couldn't attend due to prior commitments. The dinner event therefore did not turn out as expected. The costs involved exceeded the money generated resulting in a loss of K3, 300. The fundraising dinner should not have recorded a loss had all the pledges been honoured. On the other hand, the dinner event was a huge success in terms of the level of awareness and promotion reached. Those that attended are passing the word around and the local Member of Parliament (Hon Richard Maru) and the director of PNG National Cultural Commission attended the occasion and gave praise for the initiative and offered advice and better support for the years ahead. For acknowledgements and other information on the fundraising dinner, please see the acknowledgement flyer included in the appendix.

The reader will have noticed that a large portion of the funds received was provided by two private sponsors. These sponsors in their good will and value in the local culture have provided back-up support funding to ensure that the program achieves its first milestone –to start off the process of staging initiation ceremonies. The amounts shown against their space (of sponsorship) are therefore actually an under estimation of the total funds and support they have provided. To encourage collective work and to protect their interests, the private individual sponsors have chosen to remain anonymous.

10. What lies ahead

While this new culture program had a great deal of support, there were also many sceptics and people who had personal agendas including politics. With so much interest on the local cultural practices now being generated, it will not be surprising to see culture related activities and developments given special consideration in Yangoru-Saussia District. Such good will and support to revive local culture is quite welcome. However, the original culture revival program will not deviate from its initial objective to revive local culture through the staging of modified initiation ceremonies. This essentially means that initiation ceremonies are going to be encouraged and ways are going to be found to sustain the program.

One of the priorities for 2016 is to align the culture program with the District Development Plan. As advised by the CEO (of Yangoru-Saussia District Development Authority), the program will first design a curriculum that captures the District Policy on Early Childhood Development. To design this curriculum, a consultative workshop will be organized mainly with prominent culture leaders. That consultative workshop will deliberate on the particulars of the proposed curriculum including the 'what', 'when' and 'how' questions on the subjects to be taught. Funding for this workshop will be requested from donor and government agencies.

Following the 2015 initiation ceremonies, interests in many other communities have soared. Between 10-15 communities are expected to participate in the 2016 initiation ceremonies. These initiation ceremonies will be led and organized by the newly formed Yangoru-Saussia School of Culture and Ethics. All participating communities will register their participation with the central organizing team (Yangoru-Saussia School of Culture and Ethics) with a specified registration fee. Funds collected through this registration will go towards the anticipated expenses. The number of participating communities is expected to increase every year so that by the year 2020, Yangoru-Saussia will have established a network of initiating communities numbering between 30 and 50.

The registration fees will be kept to the minimum in order not to discourage young people from participating. The program will therefore continue to seek sponsorship from individual donors or government and private or NGO organizations, at least for the next 3 years until the program is able to self-sustain through the collection of an optimal amount of fee from participants. In the meantime, to encourage good will among supporters, the program is setting up a fundraising arm to contribute towards the annual cost of staging the initiation ceremonies. Self-Help fundraising projects currently being deliberated on include trade stores along the Sepik Highway and poultry/fish projects. Any help from individuals or private/government/NGO organizations to get these fund-generating activities off the ground, will be highly appreciated and duly acknowledged in our communications with stakeholders.

Communities that already expressed interest to participate in the 2016 round of the modified initiation ceremonies include the following; Nimienduohin, Kinienumbohu, Awawia, Japarakua, Huaravvri, Rhulimbo, Kairiru/Pukie, Boem-Sare, Nindipari, Belmore, Kumbuhun and Simbomie/Sengri.

Now that the male initiation ceremonies are expected to be up and running, the new Yangoru-Saussia School of Culture and Ethics will encourage some capable women of Yangoru-Saussia to take up the challenge of establishing the female component of the culture schools. The ground work has already been done, potential female lead persons will only have to add in female initiation activities and get the female members of the communities to participate.

11. Publications

The field work was full of activity and was practically impossible to attend to academic writing and potential publications. With the field work now out of the way and quite a few interesting data collected, the researcher anticipates making good progress in publication his history. The table below shows the first two published articles (since undertaking PhD studies) and the titles of working manuscripts that will be submitted to peer reviewed journals for potential publication over the next couple of months. In time, the titles of many other articles will emerge when the generated data is being analysed.

Table 4: Articles published and titles of working manuscripts

Manineng C, MacLaren D, Redman-MacLaren M, Tommbe R and Mafile'O T. (2014) <i>A Papua New Guinea–Australia HIV Research Partnership: generating new knowledge, building capacity and forging new friendships</i> . HIV Australia Vol. 12 No. 2 https://www.afao.org.au/library/hiv-australia/volume-12/vol.-12-number-2/a-papua-new-guinea-australia-hiv-research-partnership#.VhkOAFmqqko
Manineng, C. and D. MacLaren, <i>Medically assisted circumcision: a safer option for initiation rites</i> . The Medical journal of Australia, 2014. 201 (10): p. 610. https://www.mja.com.au/journal/2014/201/10/medically-assisted-circumcision-safer-option-initiation-rites
Manhood and penile modifications in Papua New Guinea

Medical circumcision – a modern alternative for penile splits at manhood ceremonies in Yangoru-Saussia, Papua New Guinea
The triple therapy for HIV prevention in Yangoru-Saussia, Papua New Guinea
Surgery at initiation sites: Challenges and opportunities for medical male circumcision at manhood ceremonies in Yangoru-Saussia, Papua New Guinea
Local culture and its un-tapped potential: A researcher’s perspective from Yangoru-Saussia

12. Research data collected to date

Table 5: Descriptions and quantities of the data collected to date.

Study component	Data collected
Acceptability Assessment	<ul style="list-style-type: none"> ✓ 80 completed structured questionnaires ✓ 8 key informant interviews
Feasibility Assessment	<ul style="list-style-type: none"> ✓ 1 x completed Descriptive Study Form I (the setting at which medical circumcision was done) ✓ 45 x completed Descriptive Study Form II (medical circumcision procedure) ✓ 5 key informant interviews
Impact Evaluation	<ul style="list-style-type: none"> ✓ 10 completed structured questionnaires

The impact evaluation needs additional 90 completed forms and 10 key informant interviews with community leaders from communities that participated in the 2015 male initiation ceremonies. The 10 key informant interviews will be conducted during the follow-up and feedback presentation meetings planned for June 2016. The required number of structured questionnaires for the impact evaluation can be filled if data collection is allowed to continue into 2016 and 2017.

13. Research revised work plan

13.1. Gantt Chart of Revised Work Plan

Activity	2015				2016				2017			
	3/12	6/12	9/12	12/12	3/12	6/12	9/12	12/12	3/12	6/12	9/12	12/12
Data collection - phase 2												

Data entry and cleaning												
Data analysis												
Information dissemination /feedback presentation												
Writing for publication												

13.2. Table of expected dates - revised

Month	Activity	Expected date of completion	Officer responsible
Dec 2015	Data Collection – phase 2	Dec 2015	CM & research workers
Jan 2016	Data entry and cleaning	Mar 2016	CM and research workers
Jan 2016	Data Analysis	Mar 2016	CM & Supervisors
Apr 2016	Information Dissemination /Feedback presentation	Sep 2016	All investigators and supervisors
Feb 2016	Writing for publication	Dec 2017	CM & Supervisors

14. Appreciation

This acknowledgment is specific for those who believed in this initiative and provided the initial backing for the culture program to its current stage. First, Australia Awards PNG is acknowledged for the scholarship from which the author and lead investigator (of this project) is able to find the time, expertise and connections to progress this initiative. Likewise, Divine Word University embraced this work from the very beginning and summed that support with full funding for data collection. Thank you to President's office and the office of the Vice President – Post Graduate and Research Studies. The author's prospects on a PhD qualification were enhanced by the research skills attained from work related to the 'Acceptability of Male Circumcision in PNG Study' led by James Cook University. To the PNG Medical Research Advisory Committee and the PNG National AIDS Council Secretariat (NACS), we appreciate the prompt Ethical Clearance and for the initial research (sponsored and ethically cleared

by NACS) that laid the foundation for current work. Appreciation is also extended to the project supervisors for timely advice and encouragements and to collaborating institutions – East Sepik Provincial AIDS Committee, Yangoru-Saussia University Resource Centre and Yangoru secondary School. To my family and the group of volunteers (you know who you are); it is your unwavering support, believe and hope, that provides the drive to go that extra mile – Thank you!

15. Statement on ownership

The initiative to revive local culture in Yangoru-Saussia is not about me as an academic or researcher; it's not even about our sitting member or intending candidates for 2017; it's not about individuals! Rather, it's about the collective 'WE'. It's about 'US' the people of Yangoru-Saussia. It's about preserving our culture for the next generation to identify themselves whilst they mingle among the colliding cultures of the modern world.

Date: 22 February 2016

Signature:

References

1. Auvert, B., et al., *Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial*. PLoS Medicine, 2005. **2**(11): p. e298.
2. Bailey, R.C., et al., *Male Circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial*. The Lancet, 2007. **369**(9562): p. 643-656.
3. Manineng, C., et al., *Traditional Best Practice for HIV Prevention, in PNG Medical Symposium*. 2012: Port Moresby.

Appendix A: Acknowledgement List for the Port Moresby Dinner Event

Yangoru-Sausia Cultural Heritage Program

DINNER OUTCOME AND APPRECIATION

Total raised

K21,200

Cash: K5,700

Cheque: K5,500

Pledges: K 7,000

Yet to collect: K3,000

Thank you very much to;

Groups

Nindibari community
Baimuru community
Dept of Com and Industry
Nat. Cultural Commission
East Yangoru LLG

Individuals

Hon Richard Maru
Dr Jacob Simet
Amb Gabriel Dusava
Prof Francis Hombhanje
Col Carl Wrakonei
Maggie Baigry
Hon Jeffery Waffi
Pr Sajo Homi
Steven Malken
Andrew Liliura
George Manihau
Agnes Pawiong
Pr Obed Yamasombi
Lorraine Manua
Bernard Juni
Grace Warie
Freddy Isiro
Graham Wavimbukie
Desmond Yaninen
Samuel Pongjura



Appreciation! Thank you! Heniembra! Woriheck!

We acknowledge and appreciate the support of the groups and individuals who contributed money, time and resources. We also dearly appreciate the numerous motivating positive comments and suggestions from the guest speakers and members of the audience. Mr Eric Manasi and the organizing team, you have pulled off a success story despite the many challenges of Port Moresby city. Well done! The lomohangu coloured the occasion with fun, excitement and pride –thanks to chiefs Lekimani and Saihengu and your group. Mr George Manihau and Ms Alma Trowalle, thank you very much for freely availing your vehicles for the cause. Thanks also to the Neimani and Juni family groups and Tom Morris and family. The money raised will subsidize the costs of staging culture schools in 9 villages in Yangoru-Saussia. We invite all supporters to attend the combined graduation ceremony on 23rd Dec at Yangoru station to witness the outcome of the contributions when participants demonstrate their learnt cultural skills. If any group, organization or individual would like to make a contribution towards the graduation ceremony, please email clement.manineng@gmail.com or etrowalle@gmail.com or call 79218090 / 71900533

Get more information from our facebook page www.facebook.com/yangorusausia

Appendix III – Fieldwork research report one



Evaluating the Acceptability and Feasibility of Integrating Medical Circumcision into Male Initiation Ceremonies in Yangoru-Saussia, Papua New Guinea.



Progress Report One

Clement Morris Manineng

PhD Candidate –James Cook University, Australia
Researcher – Divine Word University, Papua New Guinea

Supervisors

John McBride, Reinhold Muller, David MacLaren, Andrew Vallely, Patrick Gesch, Francis Hombhanje

Thursday, 15 October 2015

Introduction

A village community in Yangoru-Saussia District was positively changed following the successful staging of male initiation ceremonies; one in 2010 and another in 2011. Local women and men speak of a sense of peace and good order in the community following the initiation of most of the local male youths. At these initiation ceremonies, the undesirable practices including sorcery and witchcraft were excluded and emphasis was on '*garamut* (communication)', '*paiye-nangri* (public speaking)' and '*lomo-hangu* (singing and dance)'. In addition, the blood-letting symbolic act of transition into manhood was replaced with health-worker-administered medical circumcision and HIV counselling and testing. The positive outcome achieved by these initial modified ceremonies stimulated other communities in Yangoru-Saussia to stage their own ceremonies to achieve similar positive outcomes.

In-light of these developments, a formal evaluation of the modified initiation ceremonies was needed to justify future resource commitments by local authorities and external funding agents and to inform health policy on the possibility of integrating medical circumcision and HIV counselling and testing into modified male initiation ceremonies in Yangoru-Saussia and other tribal communities practising some form of male circumcision and blood-letting in Papua New Guinea. This formal evaluation (of the medical circumcision integrated male initiation ceremonies) is the subject of the author's PhD studies under Australia Awards Scholarship at James Cook University, Australia. Ethical clearance was granted by the PNG Medical Research Advisory Committee and James Cook University Research Ethics Committee and a funding of K52,700 was provided by Divine Word University.

The formal evaluation has three components: An acceptability assessment, a feasibility assessment and an impact evaluation. Data collection for the second component was completed at the end of September 2015 and preparations are underway to collect data for the other two components. We initially scheduled all data collection to be completed by September 2015. However, the initiation ceremonies did not eventuate in June 2015 as was initially anticipated. Instead, the initiation ceremonies are now scheduled to commence at the end of the schools calendar year. Data collection for the third second and fourth components of this research project will happen when the initiation ceremonies are in progress and at six months post initiation respectively.

The following pages provide description on the second phase of data collection and information on preparations leading up to the anticipated male initiation ceremonies. A section on the 'challenges encountered and anticipated' is included for the reader to appreciate the challenges faced by this initiative. The research project summary on the next page puts the reader into perspective regarding the whole research project.

Research Project Summary

Topic: Evaluating the medical-circumcision-integrated *male initiation ceremonies* in Yangoru-Saussia, Papua New Guinea.

Male Circumcision (MC) was found to prevent transmission of Human Immunodeficiency Virus (HIV) from women to men by as much as 60% [1-3]. In Papua New Guinea (PNG), some cultures traditionally practiced some form of male circumcision. Among the people of Yangoru-Saussia in East Sepik, PNG, penile splits were done on male initiates until for health and religious reasons, the male initiation ceremonies were ceased in the 1970s. These penile splitting initiation ceremonies are being revived, this time medical MC and Voluntary HIV Counselling and Testing (VCT) are being provided in-place of the high risk penile splits. These medical-circumcision-included male initiation ceremonies present a unique opportunity for high impact HIV prevention in Yangoru-Saussia District that needs to be explored. In particular, information urgently required includes 'cultural acceptability' and 'feasibility' assessments and a measure of 'short-term impact' on the community and on initiate's sexual practice. This research project will therefore be carried out in three parts as shown below.

Figure 1: Research Design



Findings from this study will inform program planners in East Sepik about the potential to use modified male initiation ceremonies for HIV prevention and related health programs. Additionally, this cultural approach to HIV prevention is among the first of its kind and other indigenous tribal cultures in PNG and around the world can learn and benefit from the information generated from this study. Furthermore, if the evaluation turns out to be positive, the PNG National Department of Health (NDoH) and PNG National AIDS Council (NACS) can use this information to design culture-oriented health programs both to enhance community participation and to provide an enabling environment for local cultural practices to thrive in PNG's rapidly changing society.

1. Data Collection – Phase one: Acceptability Assessment

The Acceptability Assessment includes a cross sectional survey among general members of the communities and key informant interviews with cultural leaders.

1.1. Cross Sectional Survey

Data collection for the cross sectional survey commenced May 19 – 24, and completed August 24-28 2015. The male questionnaires were administered by the author (Clement Manineng) while Ms Maggie Baigry (research assistant) administered the female questionnaires. The first point of data collection was at *BoemSare* Market along the Sepik Highway. The ward councillor made a general announcement about our presence and intention and people came forward to be interviewed. Male interviews (by the author) happened at a location some distance away from where the females were being interviewed. This arrangement for conducting interviews was repeated at two other markets (*Baimuru* and *Munji* Markets) along the Sepik Highway. We also interviewed participants at the following locations; *Sassoya* Health Centre, *Naksmingal* Sub-Health Centre, *Sause* LLG Council Chambers and *Numbo* LLG Council Chambers. Information from the participant information sheets was explained to participants and written consents were obtained prior to interviews. Literate persons self-administered the forms after signing their consent to participate. A total of 80 questionnaires were filled and placed in clearly labelled folders. Data cleaning and entry into Microsoft Excel and subsequent analysis will get underway as soon as the other phases of data collection are completed.



Figure II: Filling in questionnaires (self-administration) at Numbo LLG Council Chambers

1.2. Key Informant Interviews

The key informant interviews with male cultural leaders also took place on the same week as the cross sectional survey. Each of the four interviews took place at the following locations; Belmore village, Yangoru station, Rhulimbo Village and Munji Village. The appointments for interviews were made through local contact persons. The male cultural leaders had the full content of the participant information sheet read (in Tok-Pisin) and explained to them (by the author) and the interviews proceeded after consent forms were signed. All interviews were recorded using a voice recorder. The recorded files were later copied onto the author's laptop and stored. Data transcription and subsequent analysis will be done in conjunction with analysis of the cross sectional survey data. Key informant interviews with prominent female cultural leaders were deferred to a later date. From talking to people during the cross sectional survey, it became obvious that women have very little say in subjects concerning male initiation ceremonies and clarification was needed on the necessity for female culture leaders to be interviewed on matters concerning a 'male only affair'. Advice received from supervisors was, 'research methods warrant the interviews to proceed despite what may seem to be a subject dominated by men's' views'. Therefore, the interviews with female cultural leaders will be done and will take place in conjunction with the other phases of data collection – the feasibility assessment and impact evaluation.

2. Community mobilization and work towards initiation ceremonies.

This project in collaboration with the East Sepik Provincial AIDS Committee and the Yangoru-Saussia University Resource Centre staged a number of events to mobilize local communities towards the staging of initiation ceremonies in Yangoru-Saussia. The staged events include a formal meeting with community leaders; a public awareness campaign; a garamut drum beating campaign and the establishment of the Yangoru-Saussia Cultural Heritage Program.

2.1. Meeting with community leaders

This meeting took place on Tuesday 31st March 2015 at the Yangoru-Saussia District Administration Building – Yangoru station. Local political, administrative and cultural leaders were gathered to air their views regarding the initiative to modify and re-establish initiation ceremonies in the district. This meeting was chaired by Mr Brian Waranduo – Director of Yangoru-Saussia University Resource Centre. Mr Emil Trowalle of East Sepik Provincial AIDS Committee and Dr Clement Manineng made presentations highlighting the concept. This was followed by speeches from Local Level Government (LLG) Presidents, Principal of Yangoru Secondary School, Women and Church Representatives and various prominent cultural leaders. Comments received were all very positive and encouraging. The LLG Presidents asked for the initiative to be well coordinated with a project plan and budget so that this agenda can be discussed and resources allocated at LLG and District meetings. The Principal of Yangoru Secondary School emphasised the importance of preserving at least the good practices of local culture because those practices provide the local people with a sense of belonging and

identity. Information generated from this meeting was captured and broadcasted on 'Radio East Sepik – *neck blong Sepik*'.



Figure III. Some of the local leaders who attended the meeting at Yangoru station

2.2. Public Awareness Campaign

This public Awareness campaign was done on the following days Thursday 6th August, Friday 7th August and Sunday 8th August 2015. The team comprising members of the East Sepik Provincial AIDS Committee and members of the Yangoru-Saussia District University Resource Centre travelled to main markets for this awareness. The markets visited include *Belmore, Boem-Sare, Mambu, Sassoya, Tuonumbu* and Yangoru station. At each of those points, members of the public including women were given opportunities to air their views. All views were positive and in support of reviving the desirable aspects of initiation ceremonies.



Figure IV: Emil Trowalle of East Sepik Provincial AIDS Committee making a point during the awareness at Sassoya market

2.3. The Garamut Drum Beating Campaign

The garamut drum is one of the last remains of the Yangoru-Saussia Culture. Garamut drums can be found in almost every village. The garamut drum campaign was initiated to stir up awareness and mobilize people and resources towards the staging of modified initiation ceremonies. A billboard was erected at the start of Yangoru-Saussia segment of the Sepik Highway (from Wewak) announcing the beating of the garamut drums every Sunday at 7pm. The message on this billboard was communicated to the public during the public awareness campaign and the drums started sounding the message of cultural revival on Sunday 8th August 2015 at 7pm.



Figure V: The billboard along the Sepik Highway announcing the garamut signal

2.4. The Yangoru-Saussia Cultural Heritage Program

This program was conceived to form an umbrella under which all activities relating to the staging of initiation ceremonies can come under. This was necessary because there were a number of different entities contributing towards the staging of initiation ceremonies and a body needed to be formed that connects all those entities and coordinates the combined activities relating to initiation ceremonies. The main groups working under the Yangoru-Saussia Cultural Heritage Program include East Sepik Provincial AIDS Committee, Yangoru-Saussia District University Resource Centre, Research Project 'Evaluating the Acceptability and Feasibility of Integrating Medical Circumcision into Male Initiation Ceremonies in Yangoru-Saussia' and Yangoru-Secondary School. The logo representing Yangoru-Saussia Cultural Heritage Program is a design version of the 'Hombuli' figure that can be seen on the K5 note of PNG currency. Working under the Yangoru-Saussia Cultural Heritage Program, we are steadily erecting the necessary structures and drafting documents to establish culture schools in participating villages across Yangoru-Saussia. The culture schools which we now collectively refer to as 'Yangoru-Saussia School of Culture and Ethics' are actually the modified version of the old traditional schools where learning is gender specific, for example, the practice of male and female initiation.

Mr Samuel Pongiura, Principal of Yangoru Secondary School, is at present working on the curriculum for the culture school. We hope to have this culture school officially registered and linked with the formal education system of Papua New Guinea. Participants graduating from this culture school will be provided certificates that can be used for official purposes.

The school (Culture School) session for 2015 is scheduled to begin on the 15th November and run through to 15th December. Nine (9) villages have shown interest and are gearing up for this event. Accommodation and learning structures (hausboys) are being built and culture leaders and village elders are organizing themselves to teach in the program. Instead of the blood-letting act of transition (from boys to men) at those male initiation ceremonies, a medical team is engaged to perform medical circumcision and HIV counselling and testing on the participants. A building is currently under construction for the medical team to use for the duration of their engagement. A combined graduation (for the 9 schools) and cultural display is planned to be staged on 16th December 2015. At this event, the participants will demonstrate to the public the cultural skills they have learnt during the 4 weeks of secluded training.

For more information on the Yangoru-Saussia Cultural Heritage Program, please visit our Facebook page www.facebook.com/yangorusausia



Figure VI: One of the structures being erected (at Huaravri village) for the coming culture schools

2.5. Fundraising events

Resource constrain is the biggest challenge to the successful staging of the modified initiation ceremonies. Villages have all the bush materials but they will also need nails; some store food

to motivate extra help and the logistics of coordinating the events. The deployment of medical team will also require additional financial support. To raise the much needed funds, the Yangoru-Saussia Cultural Heritage Program has embarked on fundraising activities. Some volunteers are working on the sale of printed T-shirts while others are hosting fundraising dances – the first to be held in Goroka on the 16th of October 2015. The major fundraising event will be a corporate dinner which will also incorporate awareness and promotion of the Yangoru-Saussia School of Culture and Ethics. This event will be held in Port Moresby on the 07th of November 2015. The money we collect from these fundraising events will support the staging of those modified initiation ceremonies and fund the combined graduation and cultural display that will take place on the 16th December at Yangoru Station.



Figure VII: Printed T-Shirts on display. Money generated will support the culture schools

3. Challenges encountered and anticipated

Research involving people living in rural communities is not as easy and straight forward as theoretically anticipated. The main phase of data collection for this research project should have already happened had the modified initiation ceremonies eventuated in June 2015 as was anticipated. However, limited resources made it impossible for participating villages to stage these ceremonies on their own. Local authorities including Local Level Government (LLG) Presidents all expressed great support for the revival of local culture but when the time came for those supportive words to be honoured, local politics gets in the way and nothing was forthcoming. In addition, the culture leaders are also facing two other bigger challenges – the challenge of the doubters (people sitting on the fence and not motivated enough to support) and the challenge of cash payments for services rendered. The latter is one of the bad sides of

the growing cash economy in the District. It has now become a norm for people to expect some form of payment for services rendered even if the rendered service is for the common good. Many people in Yangoru-Saussia take the 'wait and see' approach with almost every development. These people will openly voice support for the new development but will actually take the backseat and linger in the shadows. These are the challenges faced by culture leaders and which inevitably became obstacles for this research project. In order to assist culture leaders deal with these challenges, this research project in collaboration with East Sepik Provincial AIDS Committee; Yangoru-Saussia University Resource Centre and Yangoru Secondary School, formed the Yangoru-Saussia Cultural Heritage Program. As described earlier, through the Yangoru-Saussia Cultural Heritage Program, the local culture leaders now have an ally that can help overcome the obstacles of successfully staging modified male initiation ceremonies.

The delay in the staging of modified male initiation ceremonies presented another difficulty for the author and lead investigator (Clement). As a requirement for Australia Awards Scholarship, time outside of Australia was limited to 12 months and the risk of breaching that contract and losing the scholarship was very high. By December 2015, that 12 months period would lapse and the author may have to request a suspension to scholarship to allow ample time for the completion of data collection. Suspension of scholarship will mean that the author will have to find some other means of support while data collection is being completed. An official request for extension to the 12 month limit was submitted and response is pending.

Another challenge that results from the delay in staging initiation ceremonies is an added strain on the author's PhD timeframe. This research project will have to make up for an estimated 6 months lost from delayed staging of initiation ceremonies. Future time consuming activities will have to be limited and priority placed on compiling the PhD thesis so the thesis can be submitted on or prior to the deadline of December 2017.

4. Research Opportunities

The Yangoru-Saussia Cultural Heritage Program is in a position to facilitate research work into other areas of the local culture in Yangoru-Saussia. Already, there is interest for the assessment of academic performances pre & post initiation among participants who are currently in school. The '*swanga manje*' traditional loan system could be integrated into modern lending practices and linked to the current Small to Medium Term Enterprise (SME) developments in the district. Additionally, someone with theology background could do a comparative analysis of the past and present religious practices and leadership in Yangoru-Saussia and provide a well-rounded discussion encompassing all the religious practices of the world. Another scholar could look into the different forms of traditional dances, art and songs. The Yangoru-Saussia Cultural Program will support scholars by providing specific recommendation to potential scholarship providers including Australia Awards Scholarship.

5. Publications

The author is enrolled in a PhD by publication program at James Cook University. Since enrolment, only 2 publications were achieved. Please find the links to these publications below. Work is ongoing on a number of other articles. An increase in publications is anticipated during the writing phase starting Dec 2015 when the author can concentrate on nothing else but writing.

Manineng C, MacLaren D, Redman-MacLaren M, Tommbe R and Mafile'O T. (2014) *A Papua New Guinea–Australia HIV Research Partnership: generating new knowledge, building capacity and forging new friendships*. HIV Australia | Vol. 12 No. 2 <https://www.afao.org.au/library/hiv-australia/volume-12/vol.-12-number-2/a-papua-new-guinea-australia-hiv-research-partnership#.VhkOAFmqgko>

Manineng, C. and D. MacLaren, *Medically assisted circumcision: a safer option for initiation rites*. The Medical Journal of Australia, 2014. **201**(10): p. 610. <https://www.mja.com.au/journal/2014/201/10/medically-assisted-circumcision-safer-option-initiation-rites>

6. Project Finances

Out of the K52,700 funding provided by Divine Word University, K35,000 was used for community mobilization; first phase of data collection and for preparations leading up to the successful staging of initiation ceremonies. Main costs included multiple return travels for the author from Cairns, Australia to Yangoru-Saussia (data collection site), Papua New Guinea. Other costs include vehicle hire and fuel; meeting costs; allowance for a part-time research assistant; equipment (digital video camera) and promotional material including newspaper advertisements and billboard notices. Out of the total research funds, we now have K17, 700 for the rest of the research project. A separate financial report and acquittal will be made and provided to the sponsors at the completion of data collection.

7. Revised Work Plan

7.1. Gantt Chart of Revised Work Plan

Activity	2015				2016				2017			
	3/12	6/12	9/12	12/12	3/12	6/12	9/12	12/12	3/12	6/12	9/12	12/12
Data collection - phase 2												
Data entry and cleaning												
Data analysis												
Information dissemination /feedback presentation												

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Writing for publication														
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7.2. Table of expected dates - revised

Month	Activity	Expected date of completion	Officer responsible
Dec 2015	Data Collection – phase 2	Dec 2015	CM & research workers
Jan 2015	Data entry and cleaning	Mar 2015	CM and research workers
Jan 2015	Data Analysis	Mar 2015	CM & Supervisors
Apr 2016	Information Dissemination /Feedback presentation	May 2016	All investigators and supervisors
Dec. 2015	Writing for publication	Dec 2017	CM & Supervisors

8. Acknowledgements

This research project is not possible without support from its sponsors. Australia Awards provide scholarship for the author and lead investigator (of this project). Through this scholarship, the author is able to develop the intellectual capacity to drive the search for innovative ideas that could ultimately lead to improved health outcomes and social indicators. Divine Word University through the President's office and the office of the Vice President – Post Graduate and Research, thank you so much for your generosity in sponsoring the whole research project. We acknowledge the PNG Medical Research Advisory Committee and PNG National AIDS Council Secretariat for Ethical Clearance and for the initial research (sponsored by NACS) that laid the foundation for current work. Appreciation is also extended to the project supervisors for timely advice and encouragements and to collaborating institutions – East Sepik Provincial AIDS Committee, Yangoru-Saussia University Resource Centre and Yangoru High School. To my family and the group of volunteers; it is your unwavering support that provides the thrive to go that extra mile – Thank you!

Date: 14th October 2015

Signature:

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2. Bailey, R.C., et al., *Male Circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial*. The Lancet, 2007. **369**(9562): p. 643-656.
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Appendix IV. Traditional best practice for HIV prevention study final report



Traditional best practice project

Gauging the views of local people regarding the best traditional approach to HIV prevention in Yangoru-Saussia, Papua New Guinea.

Final report to the national AIDS Council of Papua New Guinea

Clement Morris Manineng

Faculty of Health Sciences, Divine Word University

9 September 2011

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From the Author

It gives me great pleasure to present this final report to National AIDS Council on behalf of my team.

Emil Trowalle, Co-investigator and East Sepik HIV Response Coordinator approached members of this study team in 2009 and talked about his work and the possibility of involving local culture for HIV prevention. Eager to help, we got down to work straight away. The plan was firstly to gauge the peoples' views on the best approach to HIV prevention and second; if the people pointed out a particular traditional approach, the team was going to assess the validity of this approach to HIV prevention and make recommendations to National AIDS Council and other stakeholders.

A little over three years down the line, we have arrived at the conclusion of the first stage, we have gauged the peoples' views and examined them in relation to published literature. Out of this (first) stage, we will be publishing two articles in peer reviewed journals. The first article will be titled '*Revive initiation ceremonies to prevent HIV: the voice of a rural population in Papua New Guinea*'. The second article will be titled '*Introducing the hausman concept: a cultural approach to HIV prevention in a rural community in Papua New Guinea.*'

The team acknowledges and appreciates those who have assisted this project. The project supervisors Prof Hombhanje and Assoc Prof Gesch, Dean of Faculty of Health Science (DWU), Dr. Pascal Michon, Dr. Wilfred Kaleva and the team at NACS Research Coordination Unit and members of the East Sepik Provincial AIDS Committee. We also appreciate the capacity building training provided to members (especially the Principle Investigator) of this team by the PNG National AIDS Council as well as by James Cook University through their project on "Acceptability of Male Circumcision for HIV Prevention in PNG study". That training had enabled the team to stay the path and reach the study conclusion.

We anticipate that this is not the end of the road for the team, while disseminating our research findings (through journal and media publications), we will be submitting a proposal to validate the notion that 'traditional initiation ceremonies can change behavior and prevent HIV'. The people of Yangoru-Sausia have expressed (through this paper) that culture (traditional initiation ceremonies) can boost the HIV prevention effort in their setting. Their argument is plausible and needs to be further investigated. A cohort study involving exposed (initiated) and non exposed (non initiated) participants over a period of 3 years can determine the validity of this notion.

Finally, the information in this report is adapted from the manuscript titled: "*Revive initiation ceremonies to prevent HIV: The voice of a rural population in Papua New Guinea*". Before this manuscript is presented for journal publication, it will be refined after it is reviewed by at least two experienced researchers.

Happy reading!

Clement

Project Title: Traditional Best Practice for HIV Prevention in Yangoru – Sausia, East Sepik Province.

Executive Summary

Background

The control of HIV (Human Immunodeficiency Virus) in Papua New Guinea looks grim as HIV incidences in rural areas continue to increase exponentially. Local cultural values and social structures have provided the context by which people live their lives in an otherwise service forsaken rural communities. HIV intervention programs could achieve significant positive outcomes by engaging well meaning local cultural practices. This project gauged and examined the views expressed by a local rural people regarding HIV prevention in their communities.

Method

The study included four focus group discussions among community leaders, 16 in-depth interviews with male and female traditional culture leaders and 1 cross sectional survey involving 200 adults (male and female) living in Yangoru - Sausia. The interviews were recorded, transcribed, translated and analyzed. Information collected from the cross sectional survey (CSS) was doubled entered onto an excel spreadsheet and descriptive analysis was done after data was cleaned.

Findings

Community leaders expressed that traditional initiation ceremony, through its ability to instill discipline and respect, can help HIV prevention. The sampled group's agreement to this view was 75% and 81% wanted initiation ceremonies to be revived. Community leaders also expressed negative views on the role of condom in HIV prevention and this was agreed to by 43.3% of the surveyed population.

Discussion

Local cultures provide the basis by which people live and draw meanings to their lives. Various publications recommend the need to be context specific in designing HIV prevention programs and findings in this study support those recommendations. The divided view on the role of condom in HIV prevention reflects the existing criticism by some individuals as well as some church groups. On the other hand, positive views on cultural approach to HIV prevention had negligible opposition and this view was not influenced by age, gender, church denomination or attendance nor did it have a relationship with 'exposure to cultural practices'.

Conclusion

Engagement of the local culture could positively impact the HIV prevention effort in Yangoru-Sausia but further studies need to be conducted to validate this contextual approach.

Background

Halting the rapid spread of Human Immunodeficiency Virus (HIV) in Papua New Guinea may require efforts that go beyond the simple propagation of the ABC (abstinence, be faithful and condom use) message (1). These messages line the billboards, are being circulated in pamphlets, published frequently in the newspapers, broadcasted routinely on local radios, are weaved into schools and workplace programs but the HIV incidence continues to climb and remains among the highest in the Pacific region (2-4). The epidemic has a primarily heterosexual transmission with highest cases coming from major cities and towns (3,5-8). Estimations based on reported cases place current national HIV prevalence at around 1% (3,9,10) and by 2025 prevalence could be as high as 10% (11). While infection rates in urban areas appears to be leveling off, infection rates in rural areas appears to be increasing exponentially (3,5,7). This is a grave concern considering that about 85% of the population live in rural areas where HIV goes largely undetected. Papua New Guinea urgently needs innovative approaches not only to emphasize compliance to HIV prevention messages but also to have individuals generate that interest and motivation to remain infection free.

Response to the HIV threat in Papua New Guinea is complicated by unparalleled diversity in geography, language and culture and compounded by struggling essential infrastructures (3,6,8,10). In the rural areas, government services are ineffective or nonexistent and traditional social structures and customs continue to be influential institutions that provide the context by which people live and draw meaning to their lives (11-13). Inserting HIV prevention programs into those local institutions could positively impact HIV intervention efforts (14,15). It is not unreasonable therefore to suggest that some aspects of traditional practices be adopted and utilized as an avenue for HIV prevention.

In this study we gauged the views of the people of Yangoru-Sausia, a rural district in Papua New Guinea regarding HIV prevention in their communities. In the focus group discussions, there was strong agreement among community leaders that traditional initiation ceremony is the cultural practice that could have a positive impact on HIV prevention. This view was supported by 75% of the surveyed population and a further 81% were in favor of reviving the initiation ceremonies to combat HIV in their communities. Community leaders, through consensus expressed negative views on the promotion and distribution of condom (for HIV prevention) and 43.3% of the surveyed population supported this view.

This paper examines these views and discusses the value of context specific HIV prevention, one that involves and supports the local people to create and maintain the necessary change in their communities.

Contextual HIV prevention in Papua New Guinea

Since the detection of the first case in 1987 (3), the prediction of the HIV situation in Papua New Guinea was ominous (16-18). This led to the commencement of policy relevant studies and the establishment of a national HIV response coordinating body in 1997 (3). In 2006, the National AIDS Council released the first strategic plan that provides specific guidelines for the nation's response to HIV (5). Among other things, the strategic plan recognizes the need to be context specific and calls for cultural events, sports and church activities to be used as opportunities for HIV prevention(5).

In the 2007 Asian Development Bank report, Jenkins and Aruafu also valued 'context' when they suggested that HIV educational messages and behavior change programs be adapted to local conditions and concepts (13). More recently, the then secretary for National Department of Health in collaboration with esteemed Australian academics concluded in one of their reports that local solutions was a means for successfully addressing HIV in the country (19). This recognition of the importance of 'context' stems from the notion that prevention programs implemented through established social structures enables community ownership, participation and consequent high positive impact (20). In rural areas, the 'context' by which people live their lives and relate to others is provided by local traditional cultures. Hence, better outcomes for HIV prevention programs can be expected from the recognition and engagement of local cultural values and social structures.

Since the beginning of the epidemic, the ABC (Abstinence, Be faithful and Condom) HIV prevention message has been concisely and consistently relayed to the people over the years. While the 'A' and 'B' messages have settled well, the 'C' or condom message has stirred up debate and criticism especially among the churches and rural communities. The critics counter with a suspicion that 'C' encourages promiscuity and defeats the purpose of the more acceptable 'A' and 'B' messages. The combination of these suspicions and a host of other factors including non availability results in inconsistent or complete lack of use of the scientifically proven means for HIV prevention(3,21-22)

This essentially means that the HIV prevention effort must go deeper than the simple promotion and distribution of condoms, it must address behavior within local contexts. This paper demonstrates that the local of Yangoru-Sausia are divided on the issue of condom's usefulness in HIV prevention but are together on the view that a local cultural approach to HIV prevention involving initiation ceremonies could make a positive difference. Additionally, this paper shows that rural people live in societies with established social structures and HIV prevention programs would do well to be sensitive to their views and work within the context of those structures.

Method

This study aimed to gauge the views of the local people of Yangoru-Sausia regarding HIV prevention in their communities. The mixed method design enabled the generation of complementary data in a setting that had very little written information. The study was conducted in Yangoru-Sausia, a rural district in East Sepik Province, Papua New Guinea.

Conforming to local social structure, we began with four focus groups involving recognized male community leaders in December 2009, one in each of the district's four local level government (LLG)

areas. Purposive sampling approach was used. The East Sepik Provincial HIV Response Coordinating team assisted participant recruitment through its extensive network of local volunteer workers (VWs). The VWs identified local community leaders and mobilized them on the days of interviews. The discussions were facilitated by trained research assistants who were familiar with the local language. Community leaders turned up in numbers but only ten were allowed into the discussion venues to air their views. The discussions were tape recorded and transcribed. Preliminary analysis informed us that the community leaders in Yangoru-Sausia had their own views on how best to prevent HIV in their communities. Local initiation ceremonies that instilled discipline and respect were viewed as the best option but views on the promotion and distribution of condom were not positive. These views challenged our educated understanding and prompted further enquiry. For the initiation ceremony, we wanted to know the details of 'what happens', 'how the ceremony enables behavior change', 'who is involved', 'what is involved' and the practicality of using this ritual for HIV prevention. We also wanted to know if the general population shared the views expressed by the community leaders.

To address our interest, we did sixteen key informant interviews (10 male, 6 female) with recognized culture leaders and conducted a cross sectional survey from August –September 2011. Purposive sampling was employed in recruiting the key informants. The LLG areas for the male key informants were as follows; Numbo LLG 2, Sause LLG 2, East Yangoru LLG 3, West Yangoru LLG 3. The LLG areas for the female key informants were as follows; Numbo LLG 1, Sause LLG 2, East Yangoru LLG 1, West Yangoru LLG 2. The interviews were conducted by researchers of the same sex. All interviews were recorded onto a voice recorder and transcribed soon after. Concurrent with the key informant interviews, trained research assistants administered the structured questionnaire for the cross sectional survey. Here, Cluster sampling was applied and 200 people (101 male, 99 female) were recruited into the study. Recruitment sites included 3 roadside markets (along the Yangoru-Sausia segment of the Sepik Highway), 2 health facilities, 2 education facilities and 2 LLG Council chambers. Persons recruited were of or older than 17 years of age and they answered 'yes' to the question 'are you from Yangoru-Sausia'.

Questionnaires

We developed and applied 3 questionnaires. For the focus group, an open ended unstructured questionnaire had questions on 'the types of traditional practices, comparison of past and current traditional practices, questions pertaining to youth behavior and community wellbeing and questions seeking the participants' views on the best HIV prevention method for their communities. For the key informant interviews, we had 'focus group directed' questions that sought detailed information on traditional initiation ceremonies, how initiation ceremonies instill positive behavior and how initiation ceremonies could be revived (please see appendix A and B). For the cross sectional survey, we applied a structured questionnaire containing both open and closed ended questions and consisted of 3 sections covering 'demographics', 'HIV transmission and prevention' and 'traditional practices of Yangoru-Sausia'. Again, questions contained in the structured questionnaire were guided by the focus group findings (Please see appendix C)

Ethical consideration

Initial ethical clearance was granted by Divine Word University Research Ethics Committee on 11th December 2009. An independent review and clearance for key informant and structured interviews was obtained from the PNG National AIDS Council Research Advisory Committee on 28th June 2011. Ethical considerations for subject recruitment, consent procedures and anonymity were strictly adhered to.

Data management

The audio and transcribed (to word document) focus group discussion files were stored on specially marked folders in two different computers and 2 memory sticks. Subsequent files (from key informant interviews and cross sectional survey) were also stored there and password protected. The structured questionnaires were double entered (by 2 different persons) onto excel sheets and as part of pre-analysis cleaning, the 'sort and filter' function was used to compare and merge the data. The focus group discussions and key informant interviews contributed 60 pages of verbatim transcribed data. Cross examination of qualitative data was preceded by data translation from 'Pidgin' or 'Yangoru-Boiken (local language)' to English.

Qualitative data analysis

Data analysis followed the order of data collection and started with qualitative data. Transcribed data were coded and grouped into initial categories. Relationships were identified and links made between categories. Familiarization and immersion into the organized data highlighted the need for in-depth enquiry into the male and female initiation ceremonies and an assessment of the degree of agreement between community leaders and the general population.

Data from transcribed key informant interviews were coded and slotted under 'focus group determined' categories. Data derived from the 'open ended' structured questionnaire were also coded and entered under the same categories. Further linking of these categories produced two core categories ('cultural HIV prevention' and 'HIV prevention through condom use') which form the basis of this paper. At the final stage, combination of inductive and adductive thoughts was used to weave the data into a cohesive storyline.

Quantitative data analysis

The cleaned quantitative data on the excel sheet was exported onto Statistical Package for Social Science (SPSS version 19) software. This was followed by coding and value labeling prior to analysis. We computed absolute and relative frequencies and the measure of central tendency for the 'age' variable. Bi-variate analysis was done to examine relationships between variables. Classical Chi-square (Pearson) tests were computed for categorical variables and non Parametric Mann Whitney (Wilcoxon) tests were computed for combination of categorical and numerical variables.

Qualitative Results

The social structure of traditional communities in Yangoru-Sausia

There is a well defined social structure and accompanying observance of cultural practices with inherent cultural values throughout the Yangoru-Sausia district. The structure appeared to be an interrelated triad structure involving three systems; a 'clan' system, a 'bigman' system and a 'bigmeri' system. The clan system has a hereditary patriarchal lineage. All clan members respect their clan leaders and value their decision which mostly pertains to resource allocation (including land for gardening) and values that govern family well being. The bigman and bigmeri systems are dominated by the most culturally versed members of the communities and these are often elderly men and women who had gone through respective cultural initiation ceremonies. At those initiation ceremonies, these men and women receive earnest teachings on cultural practices and are trained to maintain and advocate for the observance of traditional values including virtues of mature men and women in the communities. Decision making is therefore a mutual process, one that involves consultation between those three systems. For instance, if a clan leader intends to organize a cultural event, he will have to consult the bigman and bigmeri and when the event concerns female members of the community, it is the bigmeri who will lead the design and supervision of the actual process.

"Women also have their initiation ceremonies. Some women leaders (bigmeri) organize the ceremonies and teach them (young women) and they must learn and follow. These are women's hidden thoughts (areas),(laughs)". Male Culture Leader -Boem

In the event of conflict (within clan or between clans), it is the responsibility of clan leaders to negotiate peace and the initial step is the use of the compensatory mechanism involving maternal uncles (Wawo or Kandere). This mechanism confers a degree of protection to individual members of the communities who may be abused or harmed by other members of the communities. If harm has been done to someone, that person's Wawo has the right to demand compensation from the perpetrator/s. The amount of money (modern or traditional currency) demanded is carefully calculated so that while it serves as a lesson for the perpetrators, it does not overwhelm the ability of the wrong doers to meet the demand and redeem themselves. If compensation is not paid or the harm continues after the compensation, sorcery and or witchcraft (sanguma) is invoked to cause harm or even death to the offenders. This is the stage when clan leaders collaborate with the 'bigman' and 'bigmeri' to have justice prevail in the communities.

External Influences on customary social structure and values

The local culture and leadership system has not been immune to external influences. The early Christian missionaries established another structure, one that requires weekly fellowships and acknowledgement of a supreme deity. Cultural practices that did not conform to Christian teachings were strongly discouraged and punishment of community bigman and bigmeri who tried to organize initiation ceremonies were not uncommon.

“The church said everything about custom was bad and sent the elders to jail. They said our culture was not good, it belonged to the devil. They said they have brought the Word of God and we have to follow them” Male Culture Leader, Numbo

Modern education has also impacted the communities. Young people are going to school and are increasingly influenced by western practices. Decreasing attention is being paid to counsels provided by community leaders that in the time past have been the main source of instruction for a meaningful life. Today’s generations prefer to read books, the mobile phone is their loyal companion and the Internet, particularly Facebook receive unprecedented attention. The heated competition between the nation’s mobile communication companies (B-Mobile and Digicel) resulted in reception coverage that reaches everywhere in the district. Additionally, the open or ‘over the counter’ access to unlimited information by young people (23) is in itself a threat to community well being.

Alcohol and marijuana have also had strong footholds in the communities. Disorderly people especially male youths who are under the influence of alcohol or marijuana are the usual entertainers at social gatherings including public markets. Quite often, the entertainers become rowdy and cause chaos and destruction. The frequency and extent of alcohol or marijuana related damages are often too heavy for the existing structure to effectively deal with them. When new issues are superimposed on unsolved issues, things get very complicated and this often leads to an all out physical confrontation, violence and widespread damage to lives and properties.

The effect of external influences have been positive in many ways but the negative effects could easily surpass the positives especially when essential government services such as health, education and policing are non efficient or even non-existent in rural communities (24). Today’s youths display a behavior that could not have been tolerated in the past. Untoward behaviors appear to be widespread with lack or complete disregard of the established cultural social structures. For instance, it is not uncommon for today’s youths to hurl abusive words at well meaning and even respected members of the communities for no apparent reason.

“Young people today, oh..oh...oh.....(sings). You will not have peace! They are drinking homebrew and smoking marijuana and if you complain, kan!...kan!...kan! (abusive word). There is no respect” Male Community Leader-Numbo

Additionally, insolent behavior is becoming too common even among today’s school children. A key informant working as a teacher for many years, expressed disappointment at the growing and noticeable decline in social graces among her pupils.

“As a head teacher myself, I see the problem of discipline is very big. They (students) don’t have respect. They even attack their teachers and swear at them” Female Community Leader -Numbo

External influences have not been all that good after all. Negative effects include the rapid decline in customary values and breakdown of the social structures that in the years past had provided social security and purpose for individual lives and community well being. Well meaning and significant traditional practices such as the revered male initiation ceremony are only a distant memory in the

minds of the few community bigman and bigmeri who are still alive today. While some community leaders were pessimistic about the possibility of reviving the male initiation ceremony, others were optimistic saying that it was possible but only if we can start it while culturally versed elders are still alive.

"If we want to keep our good cultural practices, the government must respond as soon as possible. If we wait for couple more years, the elders with the knowledge will all be dead and gone and all will be lost" Male Community Leader, East Yangoru.

Cultural practices has since dwindled to few practices that are palatable to Christian principles and modern world views. The few practices include bride-price ceremonies, compensation ceremonies and funeral ceremonies. However, the local people, even the young adults are aware of the negative effects of declining customary values and practices. This awareness is resonated in the cross sectional survey where 78% of the sample were in support of the positive effects of the local culture on youth behavior.

Increase in HIV, a consequent of declining customary values and practices.

Individual character and behavior is shaped by the cultural values that a person is raised up with. In the past, customary values included respect for self and for other members of the community and to their environment. Nothing was done without prior consultation and or consent. All important decisions were arrived at through a communal process facilitated by community leaders. Respect for self encompasses an intrinsic desire to remain free of any activity that will bring disrepute to individuals or to their clans or communities. Consequently, this desire leads to treating every other person with dignity and respect and every other activity, including allocating of resources and environmental management is with special regard to honor and self worth. In today's contemporary culture, traditional cultural values are fused with western values and complicated by the demands that come with modernization. This result in a new trend of behavior, one that is likened to a cocktail that when drunk, the people appear to be disinhibited and exhibit a behavior of disrespect towards established structures and salient disregard for self and community well being. This provides the perfect recipe for the rapid spread of HIV in the communities.

Like many traditional cultures in PNG, sex is not talked about openly in Yangoru-Sausia. Education on sex was primarily done during manhood and womanhood rituals and taught within the context of marriage and responsible living. With non existence of those rituals, today's young people are exposed to this once sacred act (sex) through modern mediums that hardly offer any guidance for responsible living . The behavior portrayed from this exposure include sexual experimentation and early sexual debut, teenage and unplanned pregnancies, multiple sex partnering and general increase in gender related problems. All these considerably increase the risk of acquiring HIV and propels HIV transmission in the communities.

Condom promotion and distribution encourages spread of HIV

Despite having scientific proof of preventing HIV transmission, consideration of social dynamics and associated risks could outweigh the protection conferred by condom. When airing their views in the focus groups, a number of community leaders openly discouraged the promotion and distribution of

condom. It was reasoned that condom only encourages people to engage in risky behavior. There was an air of frustration about the condom issue in all the focus groups. Several participants expressed that if the government was serious in addressing the spread of HIV, it should fund community programs that address behavior instead of spending money on condoms.

“Government is only spreading HIV when it is spending a lot of money on importing condoms. Condoms make people to engage in sexual activities. When people see condoms, they cannot control themselves, they will want to have continuous sex”. Male Community Leader, West Yangoru.

“I can say that condom promotes HIV/AIDS because condom encourages people to have many sexual partners (pasin pamuk). I say no to this behavior (pasin pamuk) but I am wasting my time. They (young people) are not listening to me. We have to stop condom!” Male Community Leader, East Yangoru.

This view was echoed by 43.3 % (n=84) of the surveyed population. The majority of those with negative views on condom had ‘encourage promiscuity’ as the main reason. A number of people also had misconceptions, one of it being microscopic holes in the condom that can allow the virus to pass through.

Traditional initiation ceremonies can prevent HIV in the communities.

Initiation ceremonies in Yangoru-Sausia were learning institutions where young members of the communities were taught and equipped with life skills that enabled them to lead meaningful and responsible lives. A clear demarcation exists when it comes to gender. Male initiation ceremonies are organized by the bigman and female initiation ceremonies are organized by bigmeri. Material resources and land are allocated by clan leaders. Both ceremonies teach life skills and train their participants in seclusion usually in specially built huts. Subjects covered in this early school include food security, inter personal relationships, generation of wealth, sex education, land ownership, family planning and customary practices and values. The initiates are also taught about their family lineage and expected standards of behavior and also about the system of governance and the consequences of stepping out of line.

The ceremonies are supplemented by two processes; a process of enhancing mental capacity that helps initiates to understand and acquire the life skills and a process of instilling discipline which involves a number of endurance tests. Initiates and initiators all fast during the whole process. Restriction is placed on water and animal protein and a number of other edibles. A process of inflicting pain happens about a week prior to graduation. This stage is described as the most trying stage. The initiates walk or are carried (if too weak) through a tunnel made up of men and women yielding fresh slender sticks (jickie) and skin burning leaves (jivia). As the initiates move along that tunnel, they are battered with the jickie and rubbed with jivia. For male initiates, the final endurance activity is penile pricking (or poking). At a nearby stream, the initiates sit in the water and the penile poking expert comes with a dagger carved out of cassowary leg bone (flying fox talons and thorny vines in some areas). The dagger is driven into the penile urethra and angled outwards so as to rip an opening through the penile head and foreskin. No

attempt is made to stop the bleeding because it is perceived as being symbolic of letting out mother's blood and signifies readiness for adult life.

It is through this traditional training institution that young people come face to face with the realities of life and receive the required knowledge and training to face the challenges life throws at them.

Knowledge alone is not enough, at the initiation ceremonies, special herbal preparations open up the minds (of initiates) enabling them to discern wrong from right and the instilled discipline provides the impetus to live and act within the confines of the community norms.

"During the initiation, special vines will be given to the initiates and when they take it, their minds will open up and they will know what is right and what is wrong" Male Culture Leader -Numbo

The resulting character is one that exhibits respect for self and others as well as respect for the environment in which they live in. It is therefore highly likely that initiated young men and women will have the desire, skills and the discipline to confine sex to mutually faithful relationships and protect themselves from HIV.

Quantitative Results

Demographics

The study sample consisted of 101 (50.5%) males and 99 (49.5%) females. The median age was 36 with an inter-quartile range of 25-47.75. Maximum and minimum ages were 80 and 17 respectively and mode was 19.

Sample distribution across the 4 LLG is as follows; Numbo 24.5% (n=49), Sause 25% (n=50), East Yangoru 25% (n=50), West Yangoru 25.5% (n=51)

In terms of education, 29.5% (n=59) had primary education, 32% (n=64) had high school education, 6.5% (n=13) had secondary school education, 14.5% (n=29) had tertiary education, 3% (n=6) had informal education and 14.5% (29) had no modern education.

One participant of the study was from Bahai Faith. The rest belonged to Christian denominations as follows; Catholic Church 46.5% (n=93), Assemblies of God 32% (n=64), Seventh Day Adventists 18.5% (n=37), New Apostolic Church 3% (n=6), Revival Church 1.5% (n=3) and other churches 5% (n=10). Regular church attendees made up 57% (n=114) of the sample, 24.5% (n=49) of the participants attend church occasionally and 17.5% (n=35) were not attending church anymore. When asked about the last church attendance, 62.5% (n=126) said 'last week', 8.5% (n=17) said 'last month', 11% (n=22) said 'some months ago' and 15.5% (n=31) said 'some years ago'.

Regarding the 'participants' time in the village', 43% (n=84) said that they have been in their villages all their lives, 37% (n=74) said they have been in their villages for most part of their lives and 18.5% (n=37) said they have been in their villages for short part of their lives.

The study sample had 48.5% (n=97) of participants who had been traditionally initiated and equal proportion (48.5%, n=97) were not initiated. Among the male participants, 56.4% (n=57) had not been traditionally initiated and 39.6% (n=40) had received traditional initiation into manhood. Among the female participants, 40.4% (n=40) had not been traditionally initiated and 57.6% (n=57) had received traditional initiation into womanhood. 79.8% (n=157) reported their involvement in other (than initiation) cultural practices and 92% (n=184) reported having witnessed one or more cultural practices in Yangoru-Sausia.

Sale of 'cash crops' was reported to be the main source of income by 77.6% (n=156) of the study participants, 53.2% (n=107) mentioned garden crops, 17.4% (n=35) mentioned informal jobs, 17.9% (n=36) had formal employment and 15.4% (n=31) said they receive income from customary payments as well. Those with formal jobs included 15 education workers, 5 health workers, 12 LLG workers and 2 policemen.

When asked about the main route of HIV transmission, 90.5% (n=181) mentioned 'sex'. 9.5% provided responses relating to behavior e.g. disrespect or lack of discipline.

Table 1: Summary statistics for responses to use of condom and cultural practices

Variable	Response	Proportion	Confidence Interval (95%)
Can use of condom prevent HIV	Yes	42% (n=83)	35 - 48 %
	No	43.3% (n=84)	35 - 49 %
Can upholding cultural practices help HIV prevention	Yes	78 % (n=156)	72 – 84 %
	No	10.7% (n=21)	6 - 15 %
Cultural practices that can help prevent HIV	Initiation ceremonies	53 % (n=106)	46 – 60%
	Follow custom	22 % (n=44)	16 – 28%
	Bride price ceremony	3% (n=6)	Unable to compute**
	Traditional singing	2.5 % (n=5)	Unable to compute
	Other*	8 % (n=14)	Unable to compute
Can initiation ceremony help prevent HIV	Yes	68.5% (n=135)	62.01 – 74.99 %
	No	9.5% (n=19)	5.40 – 13.60 %
Revive initiation ceremony for HIV prevention	Yes	81% (n=167)	75.52 -86.48 %
	No	8.5% (17)	4.60 – 12.40 %

** sample too small for SPSS to compute a t test. * other answers include 'modern times', 'go to church', 'funeral ceremony', 'peace ceremony) and 'not sure'

Table 2: Test for association between variables

Test for association (α set at 99%)	Condom can prevent HIV	Culture can prevent HIV	Initiation can prevent HIV	Revive initiation for HIV prevention
Age	p=0.027	p=0.657	p=0.201	p=0.038
Gender	p=0.100	p=0.001	<u>p<0.001</u>	p=0.009
Marital status	p=0.204	p=0.010	p=0.150	p=0.006
Education level	p=0.305	p=0.098	p=0.188	p=0.110
Church Denomination	p=0.394	p=0.370	p=0.268	p=0.807
Church attendance	p=0.780	p=0.177	p=0.568	p=0.540
Time in village	p=0.357	p=0.984	p=0.294	p=0.752
Traditionally initiated	p=0.844	p=0.542	p=0.971	p=0.891
Involved in cultural practice	p=0.047	p=0.037	<u>p=0.001</u>	p=0.018
Witnessed cultural practice	p=0.360	p=0.722	p=0.465	p=0.640
Sex transmits HIV	p=0.322	p=0.757	p=0.057	p=0.774
Condom can prevent HIV	xxxxxxxxxxxxx	p=0.025	p=0.187	p=0.944
Culture can prevent HIV	xxxxxxxxxxxxx	xxxxxxxxxxxxx	<u>p=0.<0.001</u>	<u>p<0.001</u>
Initiation can prevent HIV	xxxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxx	<u>p<0.001</u>

Discussion

The quantitative results bring out two main considerations. First, consistent with country wide views, almost equal proportion of participants held opposing views on the usefulness of condom in HIV prevention. The second consideration is that the view supporting the use of local culture for HIV prevention has no association with people's views on the condom ($p=0.025$, $p=0.187$) nor is it associated with level of education ($p=0.098$, $p=0.188$), amount of time in the village ($p=0.984$, $p=0.294$) or participation or involvement in cultural practices ($p=0.722$). Examination of association with church denomination and church attendance was not significant as well ($p=0.370$ and $p=0.780$ respectively).

The significant association between positive responses on cultural approach to HIV prevention and for reviving traditional initiation ceremonies ($p<0.001$) suggest that the people see something good, something positive in their traditional culture. Additionally, their call to revive culture is not related to their negative view on condom ($p=0.944$). Rather their call to revive culture is linked to 'culture and HIV prevention' ($p<0.001$)

Culture is not easy to define. According to the Mexico Declaration on cultural policies, culture is described as "the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a social group...not only the arts and letters but also modes of life, fundamental rights of the human being, value systems, traditions and beliefs" (25). In other words, culture shapes peoples' lives and the social structure in which they live in and therefore contributes to practices, values and attitudes. It is therefore necessary if not vital that HIV intervention programs engage culture and work within the 'cultural logic' of local communities (14). In her work on 'why HIV prevention programs fail'

Campbell argues that consultation with the local people is an important aspect considering the ability of the people to take ownership of the project to make it work (26)

The people of Yangoru-Sausia are not alone in their views on engaging local culture for HIV prevention. A report published by two leading health institutions in the world recommends for the engagement of culture for HIV prevention (27). Also, the Cross Cultural Foundation of Uganda reported a strategy whereby some good aspects of local culture were adopted as a means to address the spread of HIV among young people in their rural communities. In that program, the 'Ssengas' (paternal aunties) and 'Kojjas' (paternal uncles) whose traditional role was to instill moral values especially to adolescents and youths were supported and had HIV counseling added to their list of counseling agendas(28) . This is a very clear example of how easy it is to engage local culture for HIV prevention. The systems and or structures are established and waiting to be tapped into. Such an approach is readily acceptable; it does not cost much and has the potential to have significant positive impact on HIV prevention in rural communities.

In his work on effective communication for HIV prevention, Panos states that behavior change communication based on externally derived models and imposed messages have not worked (14). He further argues that culture is closely aligned with participatory development methods since it entails starting where people are, respecting and recognizing their ability to decide and act on what changes are important in their lives. The people of Yangoru-Sausia through their views have expressed that if they can be supported to uphold their cultural practice, something that they feel is important and something they feel is being threatened with influx of western culture and associated social problems, it is highly likely that they will take ownership of such a project and will make it their business to make it work.

The inquiry into their cultural practices sparked some community leaders in Yangoru-Sausia to organize a male initiation ceremony where 32 young men participated (29). That ceremony was not the pristine form but a sublimate version, one that is subdued to make it more acceptable in the modern era but still having the same function to instill respect and enable behavior change among male youths in the community. In place of the painful penile poking practice, the community leaders accepted the invitation by East Sepik Provincial AIDS Committee and allowed health worker administered male circumcision and voluntary HIV counseling and testing (VCT). Youth behavior in that community was reported to be noticeably better and the local people including ward counselors and the LLG president expressed appreciation and pledged support to maintain this practice (30)

In the cross sectional survey, many people expressed the near impossibility of reviving the initiation ceremonies with concerns on lack of interest among young people, interests in sticking with modern practices and the loss of culturally versed village elders. However, the example provided above shows that the people still value their cultural practices and would support any initiative to engage those practices for HIV prevention. Further to that, the majority (68.5% CI: 62.01, 74.99%) of the surveyed population also expressed confidence in HIV prevention through initiation ceremonies. Of the 9.5% who said no, 6.5% said no because of their perceived impossibility to revive the ceremony. So the actual proportion of those having confidence in the initiation ceremonies is 75% (68.5% +6.5%).

Conclusion

The people of Yangoru-Sausia have expressed that their male and female initiation ceremonies will have a positive impact on the District HIV prevention effort and would like to have those ceremonies revived. The results also suggest that people in Yangoru-Sausia still have conflicting views on the usefulness of condom to HIV prevention.

Recommendation

- I. Further study is needed to establish the validity of the claim that traditional initiation ceremonies in Yangoru-Sausia can change behavior (for HIV prevention).
- II. Empower and engage the traditional initiation ceremonies for a context specific HIV response in Yangoru-Sausia, East Sepik.
- III. Scale up efforts to dispel misconceptions surrounding the usefulness of condom in HIV prevention.

Limitations

The authors were not able to access a number of books and reports about the culture of Yangoru-Sausia people. The Michael Somare Library (University of Papua New Guinea) and the Medical Library (UPNG School of Medicine and Health Science) have some of these resources that the interested reader could try to access.

Acknowledgements

The authors would like to thank those community leaders of Yangoru-Sausia who freely gave their time and provided their views. We also thank the many ordinary citizens of the district who partook in the cross sectional survey. The research assistants who helped organized data collection, thank you very much.

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Appendix V – Abstracts of conference presentations

PNG Medical Symposium Public Health Specialty Meeting, Lamana Hotel, 8 September 2017

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Integrating safe circumcision and re-establishing a traditional behaviour change ritual for HIV prevention in Yangoru-Saussia, Papua New Guinea: an acceptability and feasibility assessment.

Background

Male circumcision (MC) can prevent HIV transmission to heterosexual men by up to 60%. World Health Organisation recommends combining MC with behaviour change HIV interventions. In Yangoru-Saussia, the male behaviour change transition rites were abandoned because they included high-risk penile operations. This study was conducted to assess the acceptability and feasibility of integrating safe circumcision and re-establishing male transition rites for HIV prevention in Yangoru-Saussia, Papua New Guinea (PNG).

Methods

A multi-method study comprising four focus group discussions and sixteen key-informant interviews (with culture leaders); two cross-sectional surveys; and one descriptive study. This research was endorsed by PNG National AIDS Council, PNG Medical Research Advisory Committee, Divine Word University and James Cook University.

Results

Most culture leaders accept integration of safe circumcision and revival of transition rites because of the opportunity to impart cultural knowledge and values to young men. MC integration and rite revival were supported by 92.5% and 81.5% of the surveyed participants respectively. Main concerns raised were weakening of tradition and revival of unchristian practices. At a transition rite staged in 2015, forty men underwent MC (after HIV counselling and testing) and there were only two (5%) minor complications which were promptly managed.

Conclusions

This study shows that integration of safe circumcision and revival of male transition rites in Yangoru-Saussia is highly acceptable and feasible. However, the proposed changes to local tradition should be culturally sensitive and devoid of perceived fears. Providing safe circumcision to initiates fulfils a national policy recommendation for safe circumcision to be availed to men undergoing high-risk foreskin cutting outside clinical settings. It also presents a unique opportunity for a comprehensive approach to preventing HIV in this setting in PNG.

PNG Impact Conference, University of Papua New Guinea, 12-13 December 2017

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Integrating male circumcision for HIV prevention with initiation ceremonies in Yangoru-Saussia, East Sepik: an exploratory study.

This study aimed to explore the possibility of integrating medical male circumcision (MMC) for HIV prevention with male initiation ceremonies (MIC) in Yangoru-Saussia, East Sepik, Papua New Guinea (PNG). There were four assessments (involving two surveys, twenty-one interviews, four focus groups and one descriptive study): circumcision and HIV risk behaviour; local acceptability; practical feasibility; and short-term impact.

Circumcision was found to be unrelated to HIV risk behaviours. Most participants supported integration of MMC with MIC. Allowing integration of MMC facilitates HIV prevention and preservation of traditional knowledge and practice. Some participants had concerns for mixing modern and traditional practices and reviving unChristian rituals. A modified MIC in 2015 included cultural training, MMC and HIV counselling and testing. This has had great impact and leaders are now appealing for continued staging of MIC.

This is the first study to explore the possibility of integrating MMC for HIV prevention with MIC. Providing MMC to initiates fulfils a national policy recommendation for safe circumcision to be availed to men undergoing high-risk foreskin cutting outside clinical settings in PNG. Integrating MMC with MICs also fulfils WHO recommendation for comprehensive approaches to HIV prevention in diverse and rapidly changing cultural settings such as PNG.

PNG Medical Symposium Public Health Specialty Meeting, Madang Resort, 6 September 2018

Foreskin-cutting in Papua New Guinea is not associated with increased sexual risk behaviours and male circumcision scale-up can be recommended for HIV prevention.

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Background

WHO/UNAIDS recommend scaling up male circumcision (MC) as an intervention to reduce HIV transmission in settings that have high HIV prevalence, low MC rates and heterosexual HIV transmission. MC for HIV prevention could be appropriate in some locations in Papua New Guinea (PNG) that fulfil the WHO/UNAIDS criteria. However, circumcised men may increase their sexual risk behaviours and counter the HIV prevention benefit of scaling up MC. Thus, the aim of this study was to investigate the association between MC and sexual risk behaviours among men in PNG.

Methods

Data from 742 sexually active men from a multi-site cross-sectional study in PNG were analysed. Detailed analyses (including multivariate modelling) of the potential influence of MC and demographics on key sexual risk behaviours ((i) sex without condom and (ii) multiple sexual partners) were conducted.

Results

Of the 742 men, 56.6% reported 'cut' foreskin: 9.7% circumferential cut and 46.5% longitudinal cut. Sex without condom (at last sex) was indicated by 66.3%. Median number of life-time female sexual partners of study participants was 6. Foreskin-cutting had no influence on 'sex without condom (crude OR: 1.00, CI: 0.73-1.37, $p=0.99$; adjusted OR:0.89, CI: 0.62-1.27, $p=0.51$) or on the number of life-time female sexual partners (crude OR: 0.79, CI: 0.59-1.06, $P=0.12$; adjusted OR:1.06, CI: 0.75-1.51, $p=0.74$).

Conclusions

Foreskin cutting is not associated with increased sexual risk behaviours. Thus, MC scale-up can be recommended for HIV prevention in settings in PNG that fulfil the WHO/UNAIDS criteria for scaling up MC.



Re-establishing safer medical-circumcision-integrated initiation ceremonies for HIV prevention in a rural setting in Papua New Guinea. A multi-method acceptability study



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Background & Purpose


- Efforts to stem the spread of Human Immunodeficiency Virus (HIV) in Papua New Guinea (PNG) are hampered by multiple interrelated factors including limited health services, extreme diversities in culture and language and highly prevalent gender inequity, domestic violence and poverty.
- In the rural district of Yangoru-Sausia, revival of male initiation ceremonies (MICs) is being considered for comprehensive approach to HIV prevention for adolescent boys.
- MICs were previously ceased due to unsafe penile operations. New MICs should integrate medical male circumcision (MMC) to make it safer.
- This study was conducted to assess the acceptability of integrating MMC and re-establishing MICs for HIV prevention in Yangoru-Sausia, PNG.

First study to explore the possibility of integrating medical circumcision with initiation ceremonies for HIV prevention in PNG

Results and discussions

81.6% supported reviving MICs for HIV prevention

92.2% supported integrating MMC with MICs



Researchers and participants posing after a focus group session in 2009 at Manku LLO council members, Yangoru-Sausia, East Sepik province.

Conclusions & Recommendations

- Most people support reviving MICs and integrating MMC for HIV prevention for adolescent boys.
- Implementing this intervention will require considerable effort given the many concerns raised by study participants.
- Integration of MMC must be culturally sensitive
- New MICs must be devoid of perceived fears including unchristian practices.
- Local people must own and lead the organizing and staging of modified initiation ceremonies.
- Further research be done to extend knowledge boundaries in this area.

Method

A multi-method study comprising three phases;

- one: four focus group discussions,
- two: sixteen key-informant interviews & one cross-sectional survey,
- three: ten key-informant interviews & one cross-sectional survey.

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Appendix VI – Summary of feedback presentation

CONCLUSION

The male and female initiation ceremonies are the cultural practices that is said to instill positive behavior change in young men and women in Yangoru-Sausia

The results suggest that the people in Yangoru-Sausia are positive for initiation to prevent HIV and would like to see those ceremonies revived and maintained.

The results also suggest that the people in Yangoru-Sausia are not convinced about the role of condom in HIV prevention

A CULTURE LEADER'S WORDS

"Mipla Sause Yangoru still mantainim culture blong mipla. Mipla ino lus lus na stap. Mipla ino go painim wanpla singsing blong wanpla ples na kam paitim shortpla kundu na singsing. Mipla stap wantaim longpla mambu blong mipla emi kamap long displa graun wantaim ol tumbuna blong yumi na mipla holim yet istap. Na emi bikpla samthing, mi ting emi value moa long displa. So em wanpla samthing mi proud long mipla Sause Yangoru because mipla ino lusim displa, mipla still holim nau tu stap"

Sponsored by PNG National AIDS Council



PARTICIPANTS OF A FOCUS GROUP WITH RESEARCHERS



HAUS BOY, BELMORE VILLAGE, WEST YANGORU

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WHAT DID THE PEOPLE OF YANGORU-SAUSIA SAY ABOUT THEIR CULTURE AND HIV PREVENTION?

Research Type: Mixed Method



4 FOCUS GROUP DISCUSSIONS IN 2009



16 INDEPTH INTERVIEWS IN 2011

1 CROSS SECTIONAL SURVEY IN 2011

456 1844

Traditional best practice for HIV Prevention. 6th Sept 2012

Sponsored by PNG National AIDS Council

RESEARCH INTO YANGORU SAUSIA CULTURE

Through their HIV Response work in East Sepik, the Provincial AIDS Committee realizes that cultural approach could be the way forward for HIV prevention in the Province. A collaboration with Divine Word University and with funding from the National Aids Council, a formal research was carried out to assess the views of the people of Yangoru Sausia. In collecting the people's views the study wanted to find out if indeed there was a local cultural method that could influence people's behavior and enable them to avoid being infected with the HIV virus.

FOCUS GROUP DISCUSSIONS & IN-DEPTH INTERVIEW RESULTS

The initiation ceremonies were avenues where people were trained to reason well and become responsible citizens who respect other people's things.

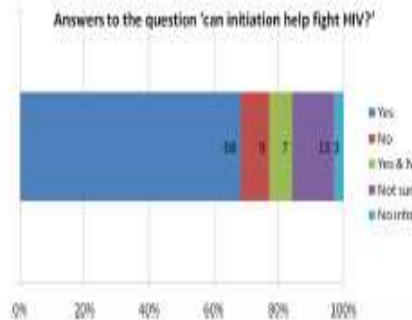
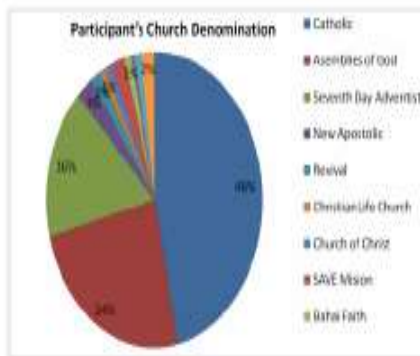
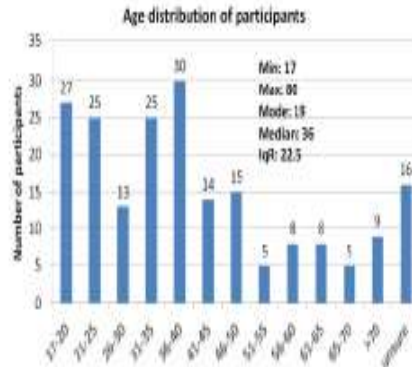
Initiation ceremony is where young men and women are trained and counseled to see themselves as mature members of the community. It is also thought of as a school where village elders and chiefs teach the young men and women.

Initiation ceremonies changed behavior by instilling discipline in young men and women. Discipline involved periods of fasting and inflicting physical pain through beatings and penile poking practices (for males)

Initiated young men and women were given special herbal preparations that opened up their minds and enabled them to reason well in everyday decision making.

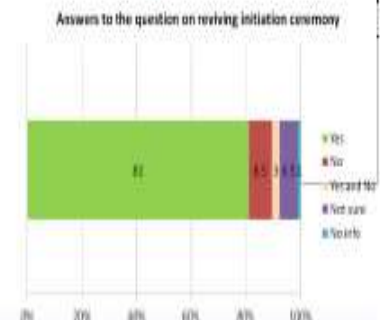
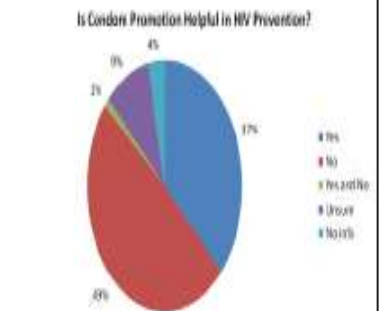
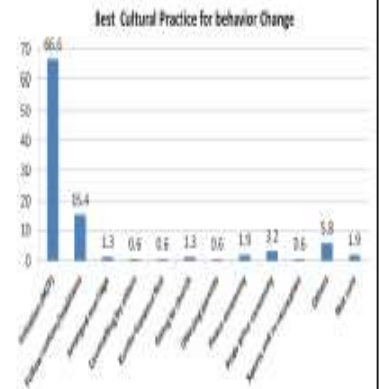
CROSS SECTIONAL SURVEY RESULTS

Total of 200 people were interviewed, 100 male and 100 female. Numbo LLG 50, Sause LLG 50, East Yangoru LLG 50 and West Yangoru LLG 50.



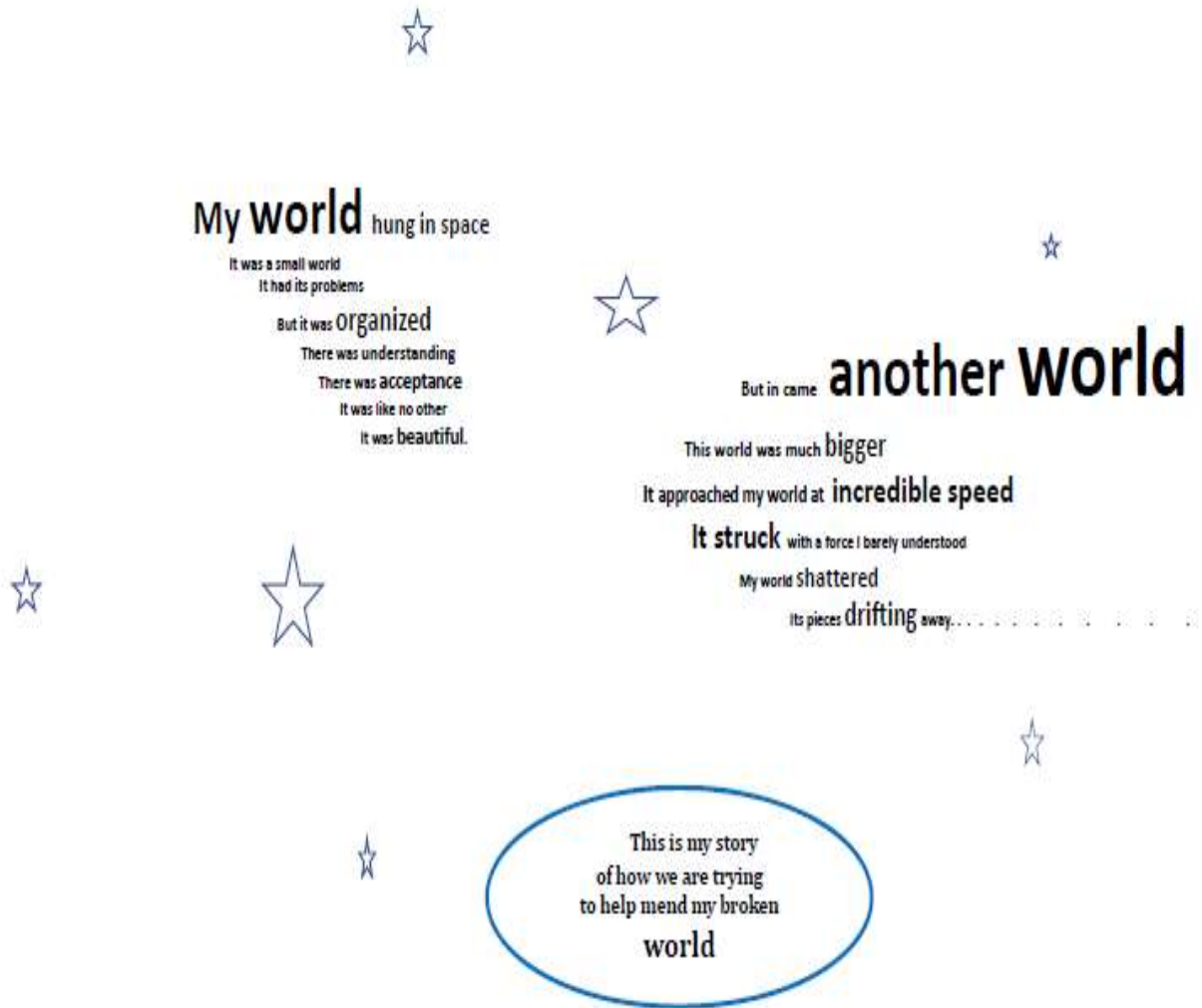
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57% (n=114) of the respondents were regular church goers. Majority (79%) of the regular church goers were in favor of culture and initiation ceremonies to be revived and maintained.



Sponsored by PNG National AIDS Council

Appendix VII – Opening of the confirmation of candidature seminar presentation



Appendix VIII – Data collection instruments for acceptability assessment

Appendix A



Focus Group Discussion Guide

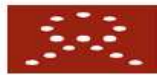
Focus Group Number:	Venue:
Date:	Moderator:
Start time:	Note Taker:
End Time:	Supervisor

Project Objective:

To assess the views of community leaders in Yangoru-Sausia regarding traditional best practice especially initiation ceremonies and the possibility of behavior change for HIV prevention among the young people of Yangoru-Sausia District

1. Can you please describe some of the cultural traditional practices especially to do with initiation ceremonies in your area?
2. What was/is the purpose of those cultural practices/initiation ceremonies?
3. Can you please compare traditional cultural ceremonies especially initiation performed in the days of your fathers to the ceremonies performed nowadays?
4. What is your view regarding the behavior/attitude of young people in the days where traditional cultural ceremonies/initiations were vibrant?
5. What is your view regarding the behavior/attitude of young people nowadays?
6. Can you please identify some behavior/attitude of today's young people that is not acceptable?
7. What are the risks of such unacceptable behavior/attitude?
8. Why do you think young people nowadays behave the way they do?
9. What are some ways or methods we could employ to change our young peoples' behavior for the better?
10. Great effort and priority is given to stop HIV/AIDS but the number of infected cases continue to rise. Why do you think this is so?
11. If we are to employ some methods to change our young peoples' behavior, what methods would you recommend for young people of Yangoru-Sausia District?
12. What makes you think that the method you mentioned will have a positive effect on the way young people behave?
13. What is your view regarding this initiative (project)?

END OF DISCUSSION



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Semi-Structure Interview Guide

Interview Number:	Venue:
Date:	Interviewer:
Time:	Supervisor:

1. **Can you please tell us about the male initiation ceremony in your area?**
 - When is it done?
 - What is the reason for it?
 - How do people prepare for it?
 - What happens at the ceremony?
 - How long does it last?
 - Who is eligible to participate?
 - Who is responsible for organizing it?
 - Is there any risks to the participant?
 - Is there any risk to the initiator?

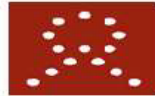
2. **Can you please tell us about the female initiation ceremony in your area?**
 - When is it done?
 - What is the reason for it?
 - How do people prepare for it?
 - What happens at the ceremony?
 - How long does it last? Initiator
 - Who is eligible to participate?
 - Who is responsible for organizing it?
 - Is there any risks to the participant?
 - Is there any risk to the initiator?

3. **Why is initiation ceremony not practiced today?**

4. **How can initiation ceremonies be revived?**
 - Who can lead?
 - Are people with custom knowledge still alive?
 - What are some taboos to follow to revive such a ceremony?
 - What is required?

5. **Do you think, initiation ceremonies can change the attitude and behavior of young people today?**
 - How can initiation ceremony change behavior?
 - What happens during initiation that favors behavior change

6. **Do you have anything else to say?**



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**Subject Information Statement and Consent Form
For Participants**

Semi-Structured Interviews

Background and purpose of study

You are invited to participate in this research study by sharing with us your experiences and insights about traditional practices in Yangoru- Sausia and its effects on behavior especially on young people.

This study is conducted by Dr. Clement Manineng of the Faculty of Health Science of Divine Word University in collaboration with East Sepik Provincial AIDS Committee. The study is assisted by Professor Francis Hombhanje and Fr. Dr. Patrick Gesch.

The purpose of the study is to document the views of community leaders /elders in Yangoru-Sausia electorate regarding traditional best practices, a means for behavior change among young people of Yangoru-Sausia, East Sepik Province. It is evident that the current methods for fighting HIV is not working so the findings from this study will be used to inform the government through the National Department of Health about the possibility of incorporating traditional best practices as one of its HIV/AIDS prevention strategies

Description of Study and Risks

If you decide to participate, one of the researchers will interview you using a set of pre-defined questions. You are free to make your comments whether it be positive or negative. The interview will be recorded using a voice recorder so that we do not miss any important things mentioned by you. The interview will take between 30 minutes to 1 hour. Before the discussion you will sign a consent form giving us permission to record your voice as well as to document your views on the topic.

Confidentiality and Disclosure of Information

Your real name will not be used in the study nor will it be used during the interview. Instead, a make up name will be used to protect your identity. Any information collected by the study will remain confidential and will not be disclosed except to the researchers. We plan to present the results at significant health conferences including the PNG Medical Symposium and may also get the work published in relevant journals. The data presented at these meetings will not identify individual subject information.

Benefits of Participation

You will be provided with refreshments for your participation.

Questions

If you have any questions about this study or about your participation, I will answer them now. And if you have questions later, you can contact me on mobile phone:

Your Consent

Now having being fully informed about the study, you can now make a decision to participate or not to participate. If you decide not to participate, you are free to withdraw your consent and discontinue your participation at any time without any problems. You will be given a copy of this form to keep.

Dr. Clement Manineng
Divine Word University
Phone: _____
Email: _____

Mr. Emil Trowalle
East Sepik Provincial Aids Committee
Phone: _____
Email: _____



Subject Information Statement and Consent Form For Participants

Structured Interviews

Participant No. Self Administered Interviewed

Background and purpose of study

You are invited to participate in this research study by answering the questions asked by a researcher. The questions will be on traditional practices in Yangoru- Sausia and its effects on behavior especially on young people.

This study is conducted by Dr. Clement Manineng of the Faculty of Health Science of Divine Word University in collaboration with East Sepik Provincial AIDS Committee. The study is assisted by Professor Francis Hombhanje and Fr. Dr. Patrick Gesch.

The purpose of the study is to document the views of community leaders /elders in Yangoru-Sausia electorate regarding traditional best practices, a means for behavior change among young people of Yangoru-Sausia, East Sepik Province. It is evident that the current methods for fighting HIV is not working so the findings from this study will be used to inform the government through the National Department of Health about the possibility of incorporating traditional best practices as one of its HIV/AIDS prevention strategies

Description of Study and Risks

If you decide to participate, one of the researchers will interview you using a set of pre-defined questions. You are free to make your comments whether it be positive or negative. The interview will fill out the questionnaire according to the response you provide for each question. The interview will take between 20-40 minutes. Your response to the questions will be indicative of your consent to participate. If you decide not to participate, you are free to withdraw your consent and discontinue your participation at any time without any problems. You will be given a copy of this form to keep.

Confidentiality and Disclosure of Information

Your real name will not be used in the study nor will it be used during the interview. Instead, a make up name will be used to protect your identity. Any information collected by the study will remain confidential and will not be disclosed except to the researchers. We plan to present the results at significant health conferences including the PNG Medical Symposium and may also get the work published in relevant journals. The data presented at these meetings will not identify individual subject information.

Questions

If you have any questions about this study or about your participation, I will answer them now. And if you have questions later, you can contact one of the two persons below.

Dr. Clement Manineng
Divine Word University
Phone:
Email:

Mr. Emil Trowale
East Sepik Provincial Aids Committee
Phone:
Email:

Section One

In this section, you will give us a little information about yourself. Please read the question on your left and circle the number in the middle column that corresponds to your correct answer on the right column. For those sections that do not provide options, please write your answer in the space provided.

1	What is your gender?	1 2	Male Female
2	What is your age group?	1 2 3 4 5 6	20 -25 years 25 -35 years 35-40 years 40 -50 years 50 – 60 years > 60 years
3	How many male children do you have?		
4	How many female children to you have?		
5	How old is your oldest child?	1 2 3 4 5	<10 years >10 years and <15 years >15 years >25 years Not sure
6	How old is your youngest child?	1 2 3 4 5 6	<5 years <10 years >10 years and <15 years >15 years >25 years Not sure
7	What is the name of your village?		
8	How long have you been in your village?	1 2 3 4	All my life Good part of my life Small part of my life Not sure
9	What is your highest level of education	1 2 3 4 5 6	University/College National High/Secondary High School Community/Primary School No formal Education Other.....(specify)
10	What are your sources of income (can circle more than one choice)	1 2 3 4 5 6 7	Formal job Cash crops Food crops Informal business (specify.....) Customary payments Other (specify)..... None
11	If you have a formal job, what is your job (for each job, please describe the exact type of job eg. Health worker = Nursing Officer)	1 2 3 4	Teacher..... Policeman..... Health worker..... Local level government

		5 6 7	worker..... Church worker (pastor etc)..... Tradesman..... Other (specify)....
12	What is the name of your Tribe?		
13	What is the name of your tribal leader?		
14	Did you ever play a leadership role in your community?	1 2 3	Yes No Not sure
15	If yes, what was the role you played? (Can choose more than one option)	1 2 3 4 5	Counselor Mediator Ceremonial Leader Family Leader Other (specify).....

Section Two

In this section, we will ask you about your knowledge on HIV. Please read the question on your left and circle the number in the middle column that corresponds to your correct answer on the right column. For those sections that do not provide options, please write your answer in the space provided.

16	What are the different ways by which HIV is transmitted?	1 2 3 4 5	Sex Sharing sharps Mother to baby Blood Transfusion Not sure
17	What is the main way by which HIV is transmitted ?(circle one answer)	1 2 3 4 5 6	Sex Sharing sharps Mother to baby Blood Transfusion Other (specify)..... Not sure
18	Which group of people are most at risk of getting HIV infection?	1 2 3 4 5 6	Small children Teenagers Young adults and youths Older adults Other (specify)..... Not sure
19	Can the use of condom prevent HIV infection?	1 2 3	Yes No Not sure
20	If no, why is it that condom cannot prevent HIV infection?	1 2 3 4 5	It is not reliable Has invisible holes that allow virus through Can break easily Other (specify) Not sure
21	Is the promotion of condom useful in the fight against	1	Yes

	HIV?	2 3	No Not sure
22	If no, why is it not useful	1 2 3 4 5	Promotes promiscuity Diverts useful resources (expensive) Unreliable (can break and has holes) Other (specify)..... Not sure
23	List some factors you know of that promote the spread of HIV in your area.		• • • • • • • •

Section Three

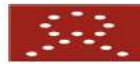
In this section, you will give us information about your experience as well as you views on traditional ceremonies in your area. Please read the question on your left and circle the number in the middle column that corresponds to your correct answer on the right column. For those sections that do not provide options, please write your answer in the space provided.

24	Did you ever participate in a traditional ceremony	1 2	Yes No
25	If yes, what was the traditional ceremony you participated in? (can circle more than one options)	1 2 3 4 5 6	Pride price ceremony Initiation ceremony (male/female) Peace ceremony (friend) Funeral ceremony Other (specify)..... None
26	If No, did you ever witness any of the traditional ceremonies mentioned above?	1 2	Yes No
27	If Yes, what were the ceremonies you witnessed? (can circle more than one option)	1 2 3 4 5 6 7	Pride price ceremony Initiation ceremony (male/female) Peace ceremony (friend) Funeral ceremony Other (specify)..... None Not sure
28	When was the last male initiation ceremony performed in your area?	1 2 3 4 5 6	Recently (give year)..... Few years ago (give year).... Many years ago Cannot remember Never had one Not sure

29	When was the last female initiation ceremony performed in your area?	1 2 3 4 5 6	Recently (give year)..... Few years ago (give year).... Many years ago Cannot remember Never had one Not sure
30	How many initiation ceremonies have you witnessed or heard of in Yangoru-Sausia in the last 10 years	1 2 3 5 6	More than 10 Between 5 and 10 Less than 5 None Not sure
31	Is initiation ceremony good for your area?	1 2 3	Yes No Not sure
32	If Yes, in what way is it good? (can circle more than one option)	1 2 3 4 5 6 7	It gives self discipline It gives strength to be an adult It is a source for wisdom It is a form of identity It brings honor Other (specify)..... Not sure
33	If No, in what way is it not good? (can circle more than once option)	1 2 3 4	Health risk Costly Evil Other (specify)..... Not sure
34	Can initiation ceremonies help the fight against HIV in your area?	1 2 3	Yes No Not sure
35	If Yes, how can initiation ceremonies help fight HIV in your area? (Can circle more than one option)	1 2 3 4	It gives self discipline It is a source for wisdom Avenue for behavior change Other (specify).....
36	Would you like initiation ceremonies to be revived?	1 2 3	Yes No Not sure
37	If no, why not?	1 2 3 4 5	Health risk Costly Evil Other (specify)..... Not sure

38. Is there anything else you wish to mention?

Appendix IX – Data collection instruments for practical feasibility assessment



Integrating Medical Male Circumcision into Initiation Ceremonies in Yangoru-Sausia

Descriptive Study –Form 1

Recorded by _____ Date _____ Time _____ Location _____

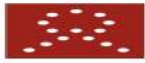
Section One: Setting for medical circumcision at initiation ceremony Please provide detailed descriptions of the settings at which medical male circumcision is provided.	
1. Describe the general surroundings of the site (include diagrams on separate paper)	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____
2. Describe the type of structure for the medical circumcision procedure (include a diagram on separate paper)	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____
3. Describe the general process of medical circumcision (include diagrams on separate papers)	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____

4. Describe the process of wound care (include diagrams on separate pages)	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
5. Describe the process of sterilization of equipment (include diagrams on separate pages)	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
6. Other	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

Section Two: Information provided to initiates at counselling sessions
Please provide detailed descriptions about the information provided to initiates during counselling sessions

1. Write down all the information provided to initiates at VCT sessions	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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3. Cost of surgical instruments	
Cost of medicine	
Cost of dressings (including stitch)	
Other	



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Integrating Medical Male Circumcision into Initiation Ceremonies in Yangoru-Sausia

Descriptive Study –Form 2

Recorded by _____ Date _____ Time _____ Location _____

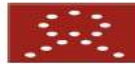
Section One: Preparation of client			
Please provide the requested information about pre-surgical preparation of the client in the spaces provided			
1	Client Number		
2	Age		
3	Date of operation		
4a	State of foreskin	1	Un-cut
		2	Cut
		3	Un-cut with injection
		4	Un-cut with inserts
		5	Other _____
4b	State of cut foreskin	1	Longitudinal cut
		2	Cowboy cut
		3	Other cut _____
4c	If cut, location of cut	1	Clinic
		2	Bathroom
		3	Bush
		4	Riverside
		5	Men's house
		6	Other (specify) _____
4d	If cut, person did the cutting	1	Health worker
		2	Relative
		3	Expert non-health worker cutter
		4	Friend/peer
		5	Other (specify) _____
4e	State of foreskin-type of inserts	1	Ball bearing
		2	Plastic
		3	Tooth brush
		4	Other _____
4f	State of foreskin- type of injection	1	Silicon
		2	Baby oil
		3	Other _____
4g	For inserts and injections, location of event	1	Clinic
		2	Bathroom
		3	Bush
		4	Riverside
		5	Men's house
		6	Other (specify) _____

4h	For inserts and injections, person who inserted or injected.	1 2 3 4 5	Health worker Relative Expert non-health worker inserter/injector Friend/peer Other (specify) _____
5	Amount of lignocaine used	_____	mls
6	Amount of iodine used	_____	mls
7	Amount of normal saline used	_____	mls
8	Number of gauze pads used	_____	gauge
9	Number of needles used	_____	needles
10	Number of syringes used	_____	syringes
Section Two: Operating process			
Please provide the requested information about the operating process (of male circumcision) in the spaces provided			
11	Operator	1 2 3 4 5	Medical Officer Health Extension Officer Nursing Officer Community Health Worker Other _____
12	List the surgical instruments used	_____ _____ _____	
13	Describe the type of cut	_____ _____	
14	Identify the type of stitch used		
15	How many stiches were used		
16	Time taken from cut to dressing	_____	minutes
17	Time taken from preparation to completion of dressing	_____	minutes
18	Amount iodine used for dressing	_____	mls
19	Number of gauze pads used for dressing	_____	
20	Number of gauze rolls used for dressing	_____	
21	List any medication applied to the wound or given to the patient.		
22	List the complete dose of medicine provided for pain management		
23	Describe any wound care advice given to patient		

Section Three: Complications			
Please provide information about any post-operative complications in the spaces provided			
24a	Pain	1 2 3	Yes No (go to question 25) Unsure
24b	Time of pain post operation	1 2 3 4 5 6	Immediately 5-10 minutes 10-30 minutes 30 -60 minutes >60 minutes Other _____
24c	Severity of pain (pain scale out of 10)	1 2 3 4	Between 1 and 3 Between 3 and 6 Between 6 and 9 Around 10
24d	Describe the treatment provided for pain _____ _____		
24e	Describe the outcome of treatment _____ _____		
25a	Bleeding	1 2 3	Yes No (go to question 26) Unsure
25b	Time of bleeding post operation	1 2 3 4 5 6	Immediately 5-10 minutes 10-30 minutes 30 -60 minutes >60 minutes Other _____
25c	Severity of bleeding	1 2 3 4	Blood soaked dressing Slow dripping (blood) dressing -1 drop/min Fast dripping (blood) dressing-1 drop/sec Other _____
25d	Describe the action taken to stop bleeding _____ _____ _____		
25e	Describe the outcome of the treatment _____ _____		
26a	Infection	1 2 3	Yes No (go to question 27) Unsure
26b	Describe the details of the infection including 'date detected', 'discharges', 'odors', 'swelling', 'color' and 'pain'. _____ _____		

	<hr/> <hr/> <hr/>
26c	Describe how the infection was managed <hr/> <hr/> <hr/>
27	Provide detailed description of any other complication that may have happened, including how it was managed <hr/> <hr/> <hr/>

Appendix A



Integrating Medical Male Circumcision into Initiation Ceremonies in Yangoru-Sausia

Subject Information Statement and Interview form: Cross Sectional Survey

Participant No. Interviewed Self-Administered

Background and purpose of study

You are invited to participate in this research by answering the questions in this interview form. The questions will be about your views on including medical circumcision at traditional male initiation ceremonies in Yangoru- Sausia

This study is being conducted in collaboration with East Sepik Provincial AIDS Committee. When complete, this study will contribute towards Dr. Clement Manineng’s doctoral qualification at James Cook University, Australia.

The overall purpose of this study is to assess whether it is acceptable and feasible for medical circumcision to take place at male initiation ceremonies in Yangoru-Sausia. In order to achieve the overall purpose, this study will assess the local peoples’ views, assess the challenges and positives of including medical circumcision at initiation sites and assess what effect the modified ceremony may have had on the initiates and the communities. If the assessment turns out to be positive, the government and other service providers both in PNG and overseas will be informed about the opportunity to include health programs into cultural practices such as male initiation ceremonies both in Yangoru-Sausia and other tribal cultural groups.

Description of Study and Risks

If you decide to participate, a researcher will interview you using an interview form. Alternatively, you can receive an interview form and fill it out yourself. You are free to make your comments whether it be positive or negative. The researcher will fill out the questionnaire (if you prefer to be interviewed) according to the response you provide for each question. The interview will take between 20-40 minutes. If you wish to participate, please provide your consent on the consent form before you proceed to answer the questions. If you decide not to participate, you are free to withdraw your consent and discontinue your participation at any time without any problems. You will be given a copy of this form to keep.

Confidentiality and Disclosure of Information

Your name will not be written in the interview form, nor will it appear in any of our reports or presentations. All information collected during the study will remain confidential and will not be disclosed to anyone apart from the researchers. The results (at the end of the study) will be presented at significant health conferences including the PNG Medical Symposium and also be published in relevant journals. The data presented at these meetings will not identify you as a participant of this study.

Questions

If you have any questions about this study or about your participation, I will answer them now. If you have concerns regarding the ethical conduct of this study, please contact James Cook University’s Human Ethics Research Office (contacts provided below).

*Human Ethics, Research Office
James Cook University, Townsville, Qld, 4811
Phone:+61 (07) 4781 5011 (ethics@jcu.edu.au)*

Section One: Background information

In this section, you will give us some information about yourself. Please read the question on your left and circle the number in the middle column that corresponds to your correct answer on the right column. For those sections that do not provide options, please write your answers in the spaces provided.

1	Are you a man or a woman?	1 2	Man Woman
2	How old are you?	I am _____ years old	
3	Are you married?	1 2 3	Yes No (go to question 6) Other _____
4	If you are married, how many children do you have?	I have _____ children	
5	If you have children, please specify their sex and age		
6	What church do you belong to?	1 2 3 4	Catholic AOG SDA Other _____
7	What local level government area (LLG) do you belong to?	1 2 3 4 5	Number Sause East Yangoru West Yangoru Other _____
8	How long have you been in Yangoru-Sausia?	For _____ years	
9	What is the highest level of formal education you have completed?	1 2 3 4 5 6	Have not attended school Elementary (prep – elementary 2) Primary (grade 3-8) High School (grade 9-10) Secondary School (grade 11-12) Other (specify _____)
10	What is your <i>main</i> source of income?	1 2 3 4 5 6	Sale of cash crops eg. cocoa Sale of garden crops eg. Banana Formal business eg. Trade store Informal business eg. Sale of betel nut Formal job Other _____
11	If you have a formal job, please describe your job		
12	Were you initiated in an initiation ceremony in Yangoru-Sausia?	1 2 3	Yes No Other _____
13	Are you aware of any initiation ceremony that had happened in Yangoru-Sausia?	1 2 3	Yes No (go to section two) Other _____
14	If yes, please provide details of the ceremony	1. male or female 2. Venue _____ 3. Date _____ 4. Other _____	

Section Two: HIV Knowledge

In this section, we will ask you about your knowledge on HIV.

15	Can a woman get HIV from having sex with a man who has HIV?	1 2 3	Yes No Not sure
16	Can a man get HIV from having sex with a woman who has HIV?	1 2 3	Yes No Not sure
17	Can a man get HIV from having sex with a man who has HIV?	1 2 3	Yes No Not sure
18	Can a person get HIV from a needle, razor or other cutting tools that have already been used by someone else for tattooing, scarification or circumcision?	1 2 3	Yes No Not sure
19	Can a person get HIV from mosquito bites?	1 2 3	Yes No Not sure
20	If someone with HIV coughs or sneezes near another person, can that person get HIV?	1 2 3	Yes No Not sure
21	Can a person get HIV by hugging someone who has HIV?	1 2 3	Yes No Not sure
22	Can a person get HIV by sharing food with someone who has HIV?	1 2 3	Yes No Not sure
23	If a woman with HIV is pregnant, can her baby become infected with HIV?	1 2 3	Yes No Not sure
24	Can the family planning pill protect a woman from HIV infection?	1 2 3	Yes No Not sure
25	If condoms are used correctly during sex do they help protect people from getting HIV?	1 2 3	Yes No Not sure
26	Can someone who looks healthy have HIV?	1 2 3	Yes No Not sure

Section Three: Modified initiation ceremony

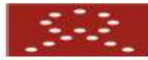
In this section, you will give us information about you views on the possibility of integrating medical circumcision into male initiation ceremonies in Yangoru-Sausia. Please read the question on your left and circle your answer from the options provided on the right. For those sections that do not provide options, please write your answer in the spaces provided.

27	Do you think male initiation ceremonies in Yangoru-Sausia can enable young men to become responsible adults?	1 2 3	Yes No Unsure
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28	Please provide one reason (the main reason) for your answer to above question. _____ _____ _____ _____ _____		
29	Would you agree for health workers to provide medical circumcision (and Voluntary HIV Counselling and Testing) at male initiation ceremonies in Yangoru-Sausia?	1 2 3	Yes No Unsure
30	Please provide reasons for your answer to above question. _____ _____ _____ _____ _____		
31	Would you like the male initiation ceremonies in Yangoru-Sausia to be revived?	1 2 3	Yes No Unsure
32	Please provide reasons for your answer to the above question. _____ _____ _____ _____ _____ _____		
33	Do you have anything else you wish to say? _____ _____ _____		

*****Thank you so much for participating in this study. The results of this study will be made available to you and the community through a feedback presentation to be organized soon*****

Appendix X – Data collection instruments for impact evaluation



ESPAC
EAST SEPIK PROVINCIAL AIDS COMMITTEE



Integrating Medical Male Circumcision into Initiation Ceremonies in Yangoru-Sausia

Interview Guide: Community Leaders

Open-ended question

- III. What do you think about the male initiation ceremony that happened recently in your community?

Prompts

- *What are some positive things that happened in your community as a result of the recent male initiation ceremony? (eg. youth behavior, general community well-being)*
- *What are some negative things that happened in your community as a result of the recent male initiation ceremony? (eg. diversion of labor, increased people movement etc)*
- *What is your general impression of those initiation ceremonies?*
- *Would you like those initiation ceremonies to continue in the future? Please explain your answer.*
- *Do you have anything else you wish to say?*

Appendix 3a

Appendix XI– Ethical approvals

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Appendix XII – PNG National Planning Ministerial brief

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Appendix XIII – Published paper about collaborative HIV research in PNG

AIDS 2014 SPECIAL EDITION

A Papua New Guinea–Australia HIV Research Partnership: generating new knowledge, building capacity and forging new friendships

By **Clement Manineng¹, Dr David MacLaren², Michelle Redman-MacLaren², Rachael Tommbe³, Dr Tracie Mafile'o³**

1 Divine Word University, Papua New Guinea; 2 James Cook University, Australia; and 3 Pacific Adventist University, Papua New Guinea

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