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Levels of resilience and delivery of HIV care in response to urban violence and crime

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- **Author contributions**

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Criteria	Author Initials
Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;	DC, GG, DT, SC
Involved in drafting the manuscript or revising it critically for important intellectual content;	DC, GG, DT, SC
Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content;	DC, GG, DT, SC
Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.	DC, GG, DT, SC

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ABSTRACT

Aims: To understand the impact of urban violence and crime on HIV care delivery.

Background: Urban violence and crime can put pressure on the health care system and on nursing staff. Whilst the impact this has at the individual level has been researched, there is less research that places this within the context of the overall social eco-system.

Design: A qualitative design using inductive thematic analysis.

Methods: Between July 2016 - February 2017, in- depth interviews were conducted with 10 nurses working in two neighbourhoods with high levels of violence in Cape Town, South Africa.

Results: The effects of crime and violence were evident at multiple levels resulting in participants feeling 'safe and unsafe' in a context where crime is viewed as endemic. Resilience emerged as a key concept in the findings. Resilience was apparent at individual, community and organizational levels and enabled continued delivery of HIV care.

Conclusion: The findings demonstrate the potential role of resilience within the social eco-health system required to sustain delivery of HIV care in the midst of urban violence and gangsterism.

Impact: This study examined the impact of and response to urban violence on HIV care delivery. The findings indicate that resilience manifests at all levels of the social eco-system. Understanding the mechanisms employed to cope with endemic violence helps to address these challenges in the study setting, but also has a much wider application to other areas with endemic urban violence and crime.

Key words: nurses, health care workers, urban violence, crime, primary healthcare, HIV/AIDS, resilience

INTRODUCTION

Urban violence and crime pressurise the overall healthcare system and stress healthcare workers, particularly nurses (Seedat, Van Niekerk, Jewkes, Suffla and Ratele, 2009; Whittington, Shuttleworth and Hill, 1996). This article focuses on the coalescing impact of urban violence and crime on HIV care delivery in South Africa, a country that

exhibits among the world's highest rates of HIV and urban violence outside of war situations (Abrahams, 2010; Seedat et al. 2009). We explore nurses' perceptions of the impact of endemic urban violence and crime on HIV care delivery in primary care facilities in two suburbs in Cape Town. We examine the impact at individual, community and organizational levels to understand how nurses provide HIV care in high-crime settings.

Background

Crime and violence and healthcare delivery

There is an emergent literature examining the provision of health care in areas where gang violence is high and may spill over into the treatment setting (Bowers, 2008; Brantley 1992; Michelman and Patak, 2008; Moore, 2012). Globally, in areas where violence is endemic, health care workers report high rates of verbal abuse and physical assault (Michelman and Patak, 2008; Schulte, Nolt, Williams, Spinks and Hellsten, 1998; Wykes, 1994). Nurses are most likely to experience violence (Whittington, et al., 1996) and a culture of acceptance of workplace violence may develop (Wolf, Delao and Perhats, 2014). This exacerbates the pressures on the already stretched HIV workforce in low and middle-income countries leading to workforce migration, resignation (Tawfik and Kinoti, 2006) and recruitment and retention problems (Child and Mentes, 2010).

Violence appears more prevalent in low and middle-income countries (Matzopoulos, Bowman, Butchart and Mercy, 2008), with South Africa experiencing very high levels of urban violence, including assault and gang violence (Abrahams, 2010). The Western Cape is especially characterised by a long-standing culture of 'gangsterism' (Western Cape Government, 2013) in some areas, linked to hegemonic forms of masculinity (Walsh and Mitchell, 2006). Nearly all (98.9%) of adolescents in a recent survey had witnessed

community violence and 40.1% had been directly threatened by violence or assaulted in their communities in Cape Town (Kaminer, du Plessis, Hardy and Benjamin, 2013).

Nurses may get caught in urban violence crossfire and report high rates of client abuse (Crabbe, Bowley, Boffard, Alexander and Klein, 2004). Clear associations exist between experiencing verbal abuse and lack of job satisfaction (Munyewende, Rispel and Chirwa, 2014) and professional burnout among South African primary healthcare clinic nursing managers (Crabbe et al., 2004). Qualitative research among Durban nurses who had resigned from their jobs identified occupational safety and workplace violence as contributory factors (King and McInerney, 2006).

Theoretical Framework

Providing HIV care in a stressful environment is likely to have an impact not just on the individual but on the interaction between the stressors (in this case crime and violence), the context and the personal characteristics of the healthcare provider (McAllister and McKinnon, 2009). Our analysis of the healthcare response to crime and violence is therefore organised with reference to a modified social ecological model, which examines salient factors at multiple levels including: individual; interpersonal; community; and organizational (see Waldo and Coates, 2000). This model is used inductively to provide a theory-based framework for understanding the multifaceted and interactive effects of individual and environmental factors (Centers for Disease Control and Prevention, 2014). It offers a useful framework for our study as a high crime/violent environment is likely to have an impact on the individual, community and organization involved in the delivery of HIV care. We therefore examine the impact of delivering HIV care from the individual nurses perspective

of both their own and others' experiences of the community and health system where they are operating.

THE STUDY

Aim

Our aim was to explore everyday experiences at individual, community and organizational levels of delivering HIV care in primary care facilities in environments with high levels of crime and violence.

Design

We adopted a qualitative inductive approach to achieve a contextualised understanding of how urban violence affects the delivery of care (Bradley, Curry & Devers, 2007). In-depth semi structured interviews with individual nurses enabled us to explore the impact of and response to, urban violence and crime in the community from their perspective situated within the context of the environment where HIV care delivery takes place.

Setting

The study was carried out in public sector primary healthcare facilities, known as Community Health Centres in two neighbourhoods (referred to here as A and B) of Cape Town, which is the 20th most violent city in the world. There are 50.94 murders per /100,000 residents and gang violence comprises a third of all city attempted murders (Ortega, 2014). Neighbourhood A has a majority of isiXhosa-speaking people, a population of approximately 400,000 residents (2011 census data), over 40% under the age of 19 years, with most

unemployed. Most neighbourhood B's approximately 17,500 residents (92.3%) self-identify as 'Coloured' (a non-derogatory term in South Africa) and two-thords of residents' first language is Afrikaans. Eighty-five percent report an income of USD 1538 or less per annum (Statistics South Africa, 2012). Territorial gangs are particularly prevalent in the greater residential area served by neighbourhood B healthcare services (Richards, 2015). Both areas are densely populated and in the upper-most quintile for violent crime in the City of Cape Town (2017 http://www.crimestatssa.com; accessed 1 April 2019).

Sample/Participants

Participants were purposively selected from a study population of public sector nurses delivering HIV and sexual reproductive health services in the Community Health Centres of the two neighbourhoods. We sought to obtain a sample of different levels of nursing staff, with diversity in age, ethnicity and sex (although nurses are predominantly female). No one who was approached for participation refused but two nurses were unavailable for interview due to time constraints.

Eight participants were interviewed from neighbourhood B and two from neighbourhood A (n=10). Four were isi-Xhosa speaking and six Afrikaans/English-speaking. Nine were female. All were registered nurses, with six describing themselves as professional nurses (with a general nursing degree or diploma) and four as clinical nurse practitioners (with advanced clinical practice training). One worked primarily in schools and one was a facility manager. The age range was 30-56 years and the length of time worked in the areas ranged from three months to 30 years. We have elected not to insert a table with specific characteristics to ensure anonymity.

Data collection

A trained qualitative interviewer, with a social work degree, conducted in-depth-interviews using a semi-structured interview schedule with unstructured probing questions. The interviewer was not limited by language as she was fluent in all of the languages used by participants. This relatively loose structure enabled participants to relate experiences that they felt important. The interviews, conducted in participants' language of choice, included questions about the impact and response to: safety concerns, e.g. "How safe a work environment do you think it is for people who work here?"; crime in the community and the clinic, e.g. "Do you think that crime and gang violence has an impact in this neighbourhood? And upon the clinic?", client access to clinics, e.g. "Do you think violence or fear of violence sometimes stops people coming to the clinic?"; recruitment and retention, e.g. "Do you think it can affect the recruitment of people to work here?"; work-related stress, e.g. "What emotional effect has this had upon you?" These questions were generally followed up with prompts such as "Can you say more about this?"

Ethical considerations

All participants provided written informed consent and approval was obtained from the relevant Institutional Ethics Review Boards at the Universities in South Africa and the UK where the authors are based. Study permission was also obtained from the City of Cape Town Health Department.

Data analysis

Interviews were recorded, transcribed and translated into English if required by the same researcher who conducted the interviews. We used an inductive and realist approach to

the coding of data, independently coding data using standard inductive thematic analysis (Braun and Clarke, 2006). By the final quarter of interviews, data saturation had been largely achieved. Latent, rather than semantic analysis, was the focus in accordance with the interpretative level of analysis associated with social constructionist approaches (Braun and Clarke, 2006).

A theme was defined as "a patterned response or meaning within the data set" (Braun and Clarke, 2006, p. 11). Codes were grouped together and initial theme titles were generated. This was firstly done independently by each co-author to identify preliminary themes (see Table 1). These were then shared and discussed focusing on commonalities and differences to develop and align the principal themes. Key themes were the ubiquity of violence and crime and the resilience evident at different levels to respond to it.

Rigour

Rigour and quality were based on the four broad principles (sensitivity to context; commitment and rigour; transparency and coherence; impact and importance) outlined by Yardley (2000). Several mechanisms were applied to ensure the trustworthiness of the data. The lead author closely reviewed the transcripts and clarified meaning when required with the interviewer. Each of the authors initially conducted the thematic analysis independently and preliminary themes were then shared and discussed collectively. This ensured all perspectives and interpretations were taken into account. We were reflexive in terms of critically examining potential subjectivities in the data (e.g. the impact of nurses being interviewed by a trained professional at their place of work) and influence of the researchers (two of whom were familiar with the fieldwork settings and two of whom were not) in terms of interpretation of the data.

FINDINGS

The ubiquity of crime and violence in and around the clinic

'Safe but not safe'

Nurses' views on violence should be viewed against a backdrop of most working and residing in areas where violence is normative. Many of those who worked in the two areas also lived in these areas. Others lived in a variety of suburbs, some where there are high levels of violence and crime, others less so. Their access to work could be impeded by robbery or hijackings en route to work. Fears of crossfire from gang and drive-by shooting were frequently mentioned and linked to gangsters (known locally as 'skollies') and drug use. As one participant in neighbourhood B said: *"because you find that everybody in the house is in a gang"* (P1).

Extremely high levels of gang violence in other neighbourhoods in the city, referred to below as neighbourhood C, appeared to be the benchmark against which they measured their own areas:

> I've been in [a Community Health Centre in neighbourhood C] for a year ….there you just walk over the road and the gun or knife is here by your neck…'do you have money, give, give, give' … …there is gun shot and everything. Here in [neighbourhood B], it not bad like that (P6, neighbourhood B).

The nurses reported seeing the clinic as a relatively safe space but not entirely so. According to one participant: *"we are not safe enough but we are safe but not thoroughly safe because anything can happen"* (P4 neighbourhood A). An example, is an incident when a patient ran into the clinic to escape a gang trying to shoot him, which frightened staff, but the rival gang members did not enter the clinic: "*they were like hunting him but didn't come into the clinic"* (P1 neighbourhood B).

Those working out in the community reported personal experience of violence:

> It was just one day when I was doing health promotion [in a school] when they were shooting in the area … the learners said "Sister, duck!"…and the children duck, they would lay on the floor and the bullet came through the window… (P10, neighbourhood B).

Witnessing violence outside the clinic was common but participants reported rarely experiencing physical violence *in* health facilities. Experiences of gang violence completely disrupting healthcare delivery by causing clinic closure only occurred in areas and times of very active gang violence. However, all reported being regularly subjected to verbal abuse (swearing and rudeness) from clients:

> I: Have any of you inside the clinic been attacked or assaulted?
> P: Not really attacked but the verbal, emotional abuse is a daily thing, really a daily thing, so we kind of got used to that, we just get surprised when a day goes by without (P5, neighbourhood B).

Crime and theft

Theft at clinics was reportedly endemic. Unsecured personal items and clinic equipment were stolen as were taps supplying water and light fittings. According to P10 a nurse manager in neighbourhood B: *"I just had 8 sets of taps [faucets] stolen in the last month...they steal everything"*. Occasionally burglaries for large items like computers occurred after hours.

Participants reported experiences of theft outside the clinic and that clients' antiretroviral (ARV) medication was sometimes stolen, although they believed this had diminished when the clinic only prescribed fixed dose combinations for ARVs, which were

less attractive to robbers. Nevertheless, theft/loss or sale of ARV medication by clients was sufficiently common for facilities to require an affidavit from the police for prescription replacement.

Individual resilience and nurse adaptation to continue delivering care

Participants reported high levels of personal tolerance of violence and displayed an uneasy acceptance of it:

> The work environment it's okay, it's almost like…I don't know if a person can say it's safe, you can't say it's safe because it's never safe but we adjust so with all of these things, we must just be on the alert (P9, Neighbourhood B.)

This response was set in the context of nowhere being perceived as 'safe'. According to P3 in neighbourhood A, *"I don't have a problem because anything can happen to everyone anywhere"*.

Most nurses demonstrated resilience in an environment of high daily crime and violence, particularly those older and more experienced. Those showing greater resilience emphasised their professional status to encourage respectful treatment and a sense of purpose helped them cope and was also used to persuade others to continue:

> You know, sometimes I ask myself what keeps me here and then I say it's the love of your job…then sometimes I would ask the staff especially when they moan about their safety… I would always ask them 'then why are you here' and then they would say 'for the patient' (P8, who has worked for 17 years in neighbourhood B).

The nurse who was caught in cross-fire at a school said that she felt: *"Scared, very scared but you know I was more thinking about the children, at that time I was thinking are the children safe"* (P10). Nonetheless, it was clear that a few nurses were reportedly unhappy working in a centre subject to violence and crime and only continued as they needed a salary, with one nurse with 30 years' experience saying: "*if I could resign I will , but I need the money still"* (P9).

Being from and part of the community was reported as protective. P8 who was a long-standing resident of neighbourhood B knew the gangsters and the area well. She had seen many of them grow up and therefore felt safer:

> They know who I am and they know they will not try their luck… if we didn't stay in the area they would try and see what they can do, but because we know where they came from, we know most of their parents (P8, neighbourhood B).

The participants reported adjusting to the clinic environment where the threat of robbery required constant vigilance. One participant (P1) who had just started working at a clinic in neighbourhood B said that she had to "*learn to lock"* whenever she left a room to avoid personal belongings and clinic equipment being stolen.

Clients who behaved threateningly were common and required management and support from others:

> There was one time, I was busy with the mother and the ex-husband came and he tried to beat the woman and I said "no you cannot attack your wife here you have to wait for your wife there outside", then I had to use my phone to call the police (P2, neighbourhood B).

Another participant said she had worked in an area where a nurse had worn a wig to work as a disguise after a client threatened her. The nurses said little about receiving support from their colleagues, although from the one nurse's description of motivating other nurses feeling despondent, it was clear that this was discussed.

Despite high levels of resilience and a shared sense of purpose, exposure to crime and violence in the workplace did have an impact on the nurses' well-being. They almost all reported some stress related to the work environment, feeling afraid and having low morale. None of those interviewed said they would leave as a result, because they needed work and had limited alternatives. One participant said that she was not happy and if there were work elsewhere: *"I would be gone long time"* (P2, neighbourhood B). However, others saw their current workplace as safer compared with some other areas: *" ..but if somebody tell me I must go and work in [neighbourhood C] I would think twice…"* (P6, neighbourhood B).

Resilience related to the community

Participants in both neighbourhoods mentioned broader violent episodes that had occurred in their communities – including rape, murder and violent hijacking. Participants also felt that the police did not take security seriously in their communities; action was seldom taken and criminals were infrequently convicted. Local Neighbourhood Watch schemes were sometimes established in response to the violence. One participant (P6) spoke of an attempt made by the clinic to build a relationship between the local Neighbourhood Watch and the Community Health Centre to enhance security although it was not clear how longstanding or effective this had been.

Nevertheless, acquiring knowledge about the community and working with the local population was reported to be key to delivery of care. Community care workers (CCWs) who live in communities they work in are commonly used in the South African health system and were talked about by the nurses. CCWs are generally paid a small stipend to visit clients in their own homes to promote engagement with the clinic, e.g. By following up non-attenders. *"They first go and do an assessment, everything in the family, check how is the house, how overcrowded it is, who's smoking drugs, who's like all that, the family circumstances"* (P1, neighbourhood B). They form a vital part of the primary care delivery system and as they are from the community, they act as expert navigators as they understand *"the streets that are very rough*" (P1, neighbourhood B).

The nurses also talked about the clients using their knowledge of their community to navigate the high-crime environment to access care. In neighbourhood B, community violence was reported to be a barrier to accessing care: *"whenever there is too much gangsterism and the crime is extreme like gun shooting and all that then the people don't come on their appointment dates"* (P9). The participants said that this resulted in clients' delayed access rather than stopping attendance as clients used their knowledge of the community so that when territorial gang violence was acute, or there was a need to avoid particular gangs, they would travel to clinics in a different area to get medication:

> I do have patients that come from [neighbourhood C] they have their own clinic there but they can't because of the constant shooting…so they come here … all the way from [neighbourhood C]… (P1, neighbourhood B).

Resilience of the organization

Participants noted that clinics had introduced several interventions to mitigate the impact of violence and sustain healthcare delivery. This included security bars on windows and doors, signage, alarm systems, guards at the gates to search everyone entering and security firms to be called on for assistance if an incident occurred. A shuttle service from the station had been arranged for nurses at the clinic in neighbourhood B for safe transport. Arrangements were made for known gang members to be treated quickly before a rival gang came looking for them and wherever possible for there to be an extra person or security guard present.

Perceptions of the effectiveness of such measures was mixed as illustrated in the quotes below:

> Yes, they [security guards] are effective enough because if you see that there is someone you don't trust, you call them and they escort the guy; they do come and they do try (P4, neighbourhood A).

> I don't think it's a safe working environment, although there's securities [guards]…they don't have like firearms...If people [clinic attenders] come with firearms then they may just shoot…they [the security guards] don't have guns, they've got batons so what is the use of that, you see (P6 neighbourhood B).

Protection from guards with firearms or police, if incidents occurred in the health facilities, was reported to be too slow to be truly effective:

> We do have panic buttons if something happens and then we have Rapid Deploy [a division in the South African police services]. If something is happening in my room then I will press my panic button…but by the time

> Rapid Deploy …come here you'll be dead…they will take time, let's say it's me and the patient and then the patient … maybe klap [hits] me and I press the panic button, yes that staff [clinic security guards] will come and check and then Rapid Deploy will come later (P1, neighbourhood B).

Strategies to cope with violence at the organizational level were therefore not always perceived to be adequate. Also, only one participant felt that she could confidently raise safety issues at meetings with managers. However, all participants acknowledged that the clinic environment was safer than being outside the clinic.

DISCUSSION

Endemic violence and crime has an impact on the delivery of HIV care and is a challenge to public health. Nurses reported feeling unsafe at times in the workplace and being routinely subjected to client verbal abuse. At the level of the clinic, high levels of violence and crime created the need for additional resources. Security equipment was required, stolen equipment and fittings required replacement and security guards needed to be employed to protect the workforce and the premises. Such measures were often considered inadequate.

Resilience emerged from the findings as a key concept at individual, community and organizational levels. Whilst resilience is often used in relation to specific traumatic events, it is also seen as a response to ongoing or 'everyday' stressors such as workplace stress and community violence (Southwick, Bonanno, Masten, Panter-Brick and Yehuda, 2014; Lanz and Bruk-Lee, 2017). Our findings are related to modern urban settings where resilience is less about the ability to recover from short term shocks and more of an on-going process denoting the ability to adapt to a complex and unpredictable world (Coaffee and Lee, 2016).

There is no universal definition of resilience adopted in the nursing research literature (Aburn, Gott and Hoare, 2016; Haase, 2004) although it is promoted as an important attribute for staff in the nursing and healthcare professions for retention and personal well-being (Jackson, Firtko & Edinborough, 2007). Resilience is generally seen as a characteristic of the individual or group that is associated with better coping skills that mitigate the impact of stressors and has particular salience with nurses whose profession is both challenging and emotionally demanding (McGee 2006). It is presumed that nurses' resilience and coping skills can sustain them through difficult work settings (Brennan, 2014) and this may explain our findings that despite routine exposure to crime and violence, the nurses remain in the healthcare system.

Several resilience models focus on strengthening individual traits such as having a high level of self-efficacy, optimism, autonomy, empowerment and 'hardiness' which help to see threats as challenges to be overcome in the face of adversity, e.g., through developing emotional insight (Jackson et al., 2007). The focus is on strategies such as maintaining positivity and developing emotional insight to adjust positively to adversity and threat but can also include repressive coping. This type of individual resilience was evident in this study, where many nurses appeared resigned to the presence of everyday violence in their workplace setting; yet committed to the higher purpose of their profession of caring for their clients.

In general, the resilience literature focuses on the individual rather than the social context (Traynor, 2017). This takes the emphasis away from the responsibility of care organizations to provide healthy work environments and away from understanding the context where healthcare takes place (Scammel, 2017). However, our study locates individual nurse resilience in the wider social context of the community and the health care system. The individual resilience that nurses demonstrated was in part linked to their professional status

and commitment, but it was also linked to their familiarity with the urban violence and crime that was a feature of the communities where they worked and very often also lived in. Violence in the community was normalised and the nurses adapted to this and were able to continue to provide care notwithstanding the violence. The normalisation of violence thus enables nurses in the community to develop strategies that allow them to continue to work and provide care in an environment that is considered violent and unsafe. Whilst they may demonstrate acceptance to living with crime they nonetheless suffer stress in doing so (Møller, 2005).

Further, whilst some participants expressed reservations about working in some particularly violent neighbouring areas, they were accepting of the work environment where they worked. The sense of purpose and dedication to their clients overshadowed their concerns for personal safety. Such findings are in line with other work in South Africa about professional nurses (Koen, Van Eeden, Wissing and du Plessis 2011). The findings are relevant to nurses working in community facilities in other parts of the world who increasingly need on-going resilience to achieve effective health care delivery in an environment that is increasingly complex, uncertain and unpredictable.

Participants rarely reported using interpersonal contacts with colleagues to keep each other safe or deriving moral support from their collective experience. This type of resilience which has been shown to be protective (Lanz and Bruk-Lee, 2017) seemed to be lacking and although implicit, there did not seem to be upper management support for their safety concerns. There is therefore room for more deliberate strategies to support nurses' resilience in the delivery of HIV care, by providing opportunities for reflection; social support; self-care and promotion of life-work balance.

Data about the resilience of the community and health care organizations were limited as the study was based exclusively on the nurses' perception. However, CCWs were an important part of the delivery of HIV care due to their knowledge of the community. There is no evidence that CCWs experienced either work HIV-related stigma or face greater risks in this role than by merely living in the community (Akintola, O and Chikoko 2016).

The health care facilities met the key requirements for resilience as outlined by Vogus and Sutcliffe (2007) in that they generally adapted sufficiently to continue to function, e.g. employing security guards and providing transport from stations for staff. Like the individual resilience demonstrated by the nurses, the organization seemed to understand and respond to the need for on-going resilience. Nevertheless, resilience at the system level was not always perceived as adequate by the nurses who at times felt unsafe and were expected to tolerate verbally abusive behaviour from their clients. Supportive leadership at the organizational level could further strengthen resilience in providing care in such settings and promote social cohesion (Gilson et al., 2017)

Limitations

This study was based on 10 interviews with nursing staff in two areas in Cape Town, which at the time the interviews were conducted were not in areas where violence was at its highest. Participants who had worked in areas with higher levels of crime and violence reported that they had experienced greater barriers to providing care than reported here and that sometimes clinics were forced to close. Thus, it is likely that the impact of violence's on HIV care delivery could be more pronounced in other areas than reported in this study.

In addition, the results are based on the reports of nurses only and therefore do not capture the perspectives of clients, members of the community or health policy makers. Therefore information about the resilience of the health care system or the community in general is limited. Furthermore, participants may either have overstated the violence or downplayed it, due to the normality of violence in their everyday lives. Nevertheless their insights provide a window into the complex intertwined factors linked to everyday resilience at individual, community and organizational levels that influence the delivery of care in areas where crime and violence is endemic.

CONCLUSION

Based on nurses' perceptions, this study demonstrates the impact of endemic violence on HIV care delivery in urban communities with high crime and gangsterism. Our study findings indicate that resilience manifests as a response at all levels of the social eco-system. The findings are likely to be applicable to other high violence settings particularly in low and middle-income countries. This builds on the limited literature that explores resilience of healthcare workers in challenging and high-risk settings. Most of this literature is grounded in psychological factors and/or political violence and war (Almedom & Tumwine, 2008; Sousa, Haj-Yahia, Feldman and Lee, 2013; Southwick et al., 2014; Southwick and Charney, 2012). Our study focus is on everyday resilience in a setting where high crime and violence is routine and on-going.

The findings can contribute to enhancing health care delivery and health systems (Panter-Brick, 2014) and help to provide support for nurses working in areas with high levels of violence and crime. While it would be unwise to make too far-reaching recommendations without input from a variety of stakeholders, the following emerge from the findings. Firstly,

greater attention could be given by management at a district and facility level to create space and opportunities for staff to debrief to ease their stress and experiences. Secondly, the district and provincial health management needs to ensure that there is a rapid and effective response to reports of violence by staff. Our findings indicate that nurses would feel safer is that were the case. Thirdly, acquiring knowledge about the community and working with people in the community seem to be important to create resilient health systems. Nurses often live in the communities where they work and an active role could be played by the health system through organisations to which their workers who live in these communities belong. Making greater use of local knowledge and connections and through health provider involvement in peace initiatives, e,g., through Community Health Committees, will help to build trust with stakeholders in the area (including community leaders, gang leaders etc.). This will help to identify and harness the facilitators while minimising or circumnavigating the barriers to enable effective health care functioning in these settings. Similar initiatives have shown positive results in other areas (Richards, 2015).

Conflict of Interest statement

None of the authors had any financial interest or benefit from the direct application of the research and findings.

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Table 1: Comparison of preliminary themes identified independently by each author

	Author 1	Author 2	Author 3	Author 4
Violence is normalised but not always	x	x	x	x
Client attendance/access	x	x	x	x
Staff feel safe but not safe	x	x	x	
Impact on staff: robbery, morale	x	x	x	x
Other social issues, eg. Drugs, dv	x			x
Security measures in clinic (or lack of them)	x	x	x	x
Theft of ARVs		x	x	x
Endemic crime within clinic		x	x	x
Aggressive/rude/threatening patients		x	x	
Treating gang members			x	x
Resilience of clients/ coping strategies	x	x	x	x
Resilience of staff	x	x	x	x
Community response			x	
Variation in violence	x		x	x