

Intimate partner violence among adolescents in South Africa and Tanzania

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Scientific environment

This PhD project has been made possible by financial funding from the Faculty of Psychology at the University of Bergen. The research was conducted at the University of Bergen, Faculty of Psychology, Department of Health Promotion and Development (Hemil Center), within the MCVenues research group. The training component of the PhD programme was mostly done within the Graduate School of Human Interaction and Growth (GHIG).

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Abstract

Background

The aims of this dissertation were to study intimate partner violence among adolescents in Tanzania and South Africa, particularly prevalences and associated factors. Furthermore, to examine the relation between violent attitudes and violent behaviour, and the importance of the Theory of Planned Behaviour in predicting sexual debut.

Intimate partner violence is the most common form of violence against women and girls. About one third of all women worldwide will experience violence from an intimate partner at least once in their lifetime. This has many negative effects on the physical, mental and reproductive health of women, among which a heightened risk for infection with HIV. This is especially worrying given the high prevalence of HIV in sub-Saharan Africa. Infection can be direct, through sexual violence and rape. Infection can also be indirect: for example, a culture of masculinity that condones male control of women, male sexual entitlement, patriarchy, and perceived low female status, all contribute to 'justifying' violence against women, thereby increasing chances of HIV infection.

With a few exceptions, the majority of studies from Africa on violence against intimate partners, concerns people from college age and onwards, and are cross-sectional in nature. Various social cognition models like the Theory of Planned Behaviour have been used in such research. On the one hand these models have shown to be useful in various Africa settings; on the other hand there is also resistance against use of such Western models in the 'global south'. The current prospective, longitudinal study will contribute to expanding knowledge on intimate partner violence among adolescents (12-15 year olds), including the usefulness of social cognition models, specifically in Tanzania and South Africa.

Methods

The three papers in this study were based on data material from survey data collections done in the SATZ study research project, a large-scale randomised controlled trial done in Tanzania and South Africa (n=15,864) between 2002-2006. Analyses in the first two papers were carried out with SPSS version 15.0, and included descriptive statistics, cross-tabulations, factor analyses, logistic regressions and general linear modelling. Analyses in paper III were done in SPSS version 19.0 and Mplus version 6, and included multi-group structural equation modelling, in addition to descriptive statistics. All analyses were adjusted for cluster effects. Measurement included scales on intimate partner violence (Straus' Revised Conflict Tactics Scales, CTS2), sexual debut, attitude towards violence, social cognition scales, and sociodemographic variables.

Results

Paper I. Violence was prevalent in all sites: depending on site and gender, 10.2-37.8% has been victim, 3.1-21.8% perpetrators, and 8.6-42.8% has been both victim and perpetrator. Being male was associated with perpetration in all sites, while being female was associated with victimization in Dar es Salaam and Mankweng (yet in Cape Town victimization was also associated with being male). In all sites higher age and low socioeconomic status was associated with all types of violence. In Cape Town, being religious and having parents with higher education was protective against all types of violence. However no clear subgroups were defined as being at much higher risk, so violence control policies should target young adolescents across geographic, economic and social groups.

Paper II. We found that results were consistent with the notion of a bi-directional attitudes-behaviour interrelationship in Cape Town (and to some extent Mankweng). In Dar es Salaam attitudes predicted behaviour prospectively, but prediction in the opposite direction was not confirmed.

Paper III. The results showed that the Theory of Planned Behaviour predictors did not have strong predictive power. Controlling for sociodemographic factors did not change the predictive power much, nor when violence was added to the model. However, violence *did* predict sexual debut directly, and explained variance in sexual debut was substantially higher when violence was added to the model.

Discussion

This study shows that intimate partner violence is highly prevalent, already at a young age, in relationships between young people in South Africa and Tanzania. To some extent this study found support for including individual attitude- and behaviour change approaches in intervention efforts: in paper II we found that in Cape Town (and to some extent Mankweng) there was a bidirectional relationship between attitudes and behaviour (attitudes towards violence and being a perpetrator), while in Dar es Salaam attitudes predicted behaviour prospectively. In paper III support was found for prediction of intentions by attitudes (and to some extent behaviour by intentions). Still, the social cognition model could only explain a limited amount of explained variance; therefore there is a need to look into other environmental influences. We emphasize the need to focus on violence in the wider community at the larger social and structural level, beyond the individual level. Future research and interventions should include both sexes, since both are part of the dynamic that keeps violence going, and target young people, preferably before they become involved in (sexual) relationships. Interventions should be adjusted to the cultural and social settings where they take place, using an ecological approach where the individual is targeted, as well as their surroundings at the interpersonal, community, and structural level.

Abbreviations

AIDS – Acquired Immune Deficiency Syndrome

GBV – Gender-Based Violence

HIV – Human Immunodeficiency Virus

IPV – Intimate Partner Violence

SATZ – acronym for South Africa and Tanzania, longitudinal HIV prevention study (n=25,000), from 2002-2006. Full Title: “Promoting sexual and reproductive health. School-based HIV/AIDS intervention in sub-Saharan Africa”

STI – Sexually Transmitted Infection

TPB – Theory of Planned Behaviour

List of publications

Paper I: Wubs, A. G., Aarø, L. E., Flisher, A. J., Bastien, S., Onya, H. E., Kaaya, S., & Mathews, C. (2009). Dating violence among school students in Tanzania and South Africa: Prevalence and socio-demographic variations. *Scandinavian Journal of Public Health*, 37(2 suppl), 75-86.

Paper II: Wubs, A. G., Aarø, L. E., Mathews, C., Onya, H. E., & Mbwambo, J. (2013). Associations between attitudes toward violence and intimate partner violence in South Africa and Tanzania. *Violence and Victims*, 28(2), 324-340.

Paper III: Wubs, A. G., Aarø, L. E., Kaaya, S., Onya, H., & Mathews, C. (2015). Social cognition variables and victimization as predictors of sexual debut among adolescents in South Africa and Tanzania: a multi-group SEM analysis. *AIDS and Behaviour*, 1-11.

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1. Intimate partner violence in sub-Saharan Africa

1.1 Background

Intimate partner violence is the most prevalent form of violence against women, with about one third of women worldwide experiencing violence from a partner at least once in their lifetime (García-Moreno, Jansen, Ellsberg, Heise, & Watts, 2005; World Health Organization, 2013). Violence jeopardises the safety and physical, psychological and reproductive health of women, including elevated risk of HIV infection through direct or indirect transmission (UNAIDS, 2011). This is especially important in sub-Saharan Africa in a context of high HIV prevalence and sub-adequate preventive practices (Jewkes, Levin, & Penn-Kekana, 2003). Studies on intimate partner violence tend to concern men and women from college age and onwards, often in a context of marriage. Studies that *do* focus on adolescents are often cross-sectional in nature. There is a lack of longitudinal research on intimate partner violence among adolescents worldwide (Leen et al., 2013), but specifically from the global South (Stöckl, March, Pallitto, & Garcia-Moreno, 2014). This study aims to contribute to increased knowledge on intimate partner violence among adolescents in South Africa and Tanzania, and correlates of such violence.

1.2 Intimate partner violence: definitional issues

There is a lack of a clear definition of intimate partner violence. Various definitions have been proposed in the past, depending on theoretical background or purpose. In general, three components are present in any definition of sexual assault or rape: a component about the act itself, about the tactic that was used to force the act, and about the expression of nonconsent (Cook, Gidycz, Koss, & Murphy, 2011). About the first component there is a fair degree of

consensus, but for the other components there is less agreement. Another point of discussion is whether definitions should be broad or narrow. Narrow definitions are often limited to sexual and physical violence. Broader definitions are multidimensional, and they include for example psychological, emotional and economic abuse (DeKesedery & Schwartz, 2001). These definitions often stem from political motivation: since broader definitions uncover higher levels of violence than narrower definitions, this has consequences for example for government funding of prevention efforts. In addition, more narrow definitions may not always include subjective experiences of people. This makes their experiences seem trivial, and possibly prohibit people from seeking social support, because they might view the experienced violence as too insignificant (DeKesedery & Schwartz, 2001). Furthermore, the reporting time periods in studies may differ: some measures focus on violence experiences regarding the last year, others on the entire lifespan, and yet others on the last violent episode (Leen et al., 2013). This lack of consensus compromises the measurement of violence against women, weakening an empirical foundation for the development and evaluation of policies and prevention efforts (Cook et al., 2011).

For this study, two definitions of violence were mainly used: a definition of dating violence in our first paper, and a definition of intimate partner violence in subsequent publications. Dating violence was defined as: “any intentional sexual, physical or psychological attack on one partner by the other in a dating relationship” (Public Health Agency of Canada, 2005). That definition was chosen since this study was exclusively about adolescents in relationships. However in retrospect, ‘dating’ as such is not a common phenomenon in the settings we studied. Relationships between boys and girls are often held secret because of fear of disapproval or social repercussions. Also, ‘dating violence’ does not typically include relationships between for example younger girls and older men. So for the two subsequent

papers we have rather used the term “intimate partner violence”, which is a broader description of violence, including physical, psychological, and sexual abuse by men and women towards romantic partners of the same or opposite sex (Capaldi, Knoble, Wu Shortt, & Kim, 2012).

1.3 Prevalence of intimate partner violence

1.3.1 Prevalence of violence against girls and women

Intimate partner violence (IPV) is a common phenomenon around the world, with women being most affected. Worldwide, depending on the geographic region, 15-71% of women experience at least one episode of sexual and/or physical violence from an intimate partner in their lifetime (World Health Organization, 2005). In sub-Saharan Africa the numbers are particularly high. Lifetime prevalence rates for women who have experienced partner violence in South Africa range between 24.6% and 55.5% (Dunkle et al., 2004; Jewkes et al., 2006). Of girls and young women aged 15-26, 25%-39% have experienced some type of violence by an intimate partner (Jewkes, Dunkle, Nduna, & Shai, 2010; Russell et al., 2013). In Tanzania, lifetime prevalences for intimate partner violence against women range from 17.2% for sexual violence and 39.2% for physical violence, to 43.6% for sexual and physical violence combined (UN Women, 2013).

1.3.2 Violence against boys and men

Although boys and men also experience violence by intimate partners, the most common form of intimate partner violence is male violence perpetrated against a female. There is, however, a need for more research on boys and men as victims too: any violence against an individual is unacceptable. In addition, there is also a link between childhood abuse and

subsequent intimate partner perpetration at later stages in life (Stöckl et al., 2014).

Furthermore, one study showed that 10% of South African men, who report having raped women or girls, also report to have raped a man or boy (Jewkes, Sikweyiya, Morrell, & Dunkle, 2011). This illustrates how complex and multi-dimensional sexual violence is, rather than being a straightforward gender issue with clear cut solutions. Our data on violence was phrased in a 'gender-neutral' way, in that it did not presuppose male violence and female victimization. Therefore we can show findings on victimization and perpetration among both sexes.

1.4 Prevalence of HIV in sub-Saharan Africa

Sub-Saharan Africa is the geographical area in the world hit hardest by the HIV epidemic. A recent UNAIDS report (2013) showed that in 2012, 70% of all new infections took place in sub-Saharan Africa. Prevalences of HIV for 2012 in South Africa for the general population were 17.9% (ages 15-49), for females 13.9% (ages 15-24), and for males 3.9% (ages 15-24). For Tanzania these figures were 5.1% (general population, ages 15-49), 3.6% (females, ages 15-24), 1.8% (males, ages 15-24) (UNAIDS, 2013). Women and girls are especially affected: 60% of the young people (ages 15-24) living with HIV are female, and 80% of all HIV-infected women in the world live in sub-Saharan Africa (UNAIDS, 2011). Since 2001, the incidence of infections in sub-Saharan Africa has declined by 34% (UNAIDS, 2013). Preventive efforts have contributed to this decline, while at the same time an acceleration in decline is necessary if the UN target of a worldwide 50% reduction of new HIV infections by 2015 (as compared to 2001) is going to be met (UNAIDS, 2013).

1.5 Pathways from intimate partner violence to HIV

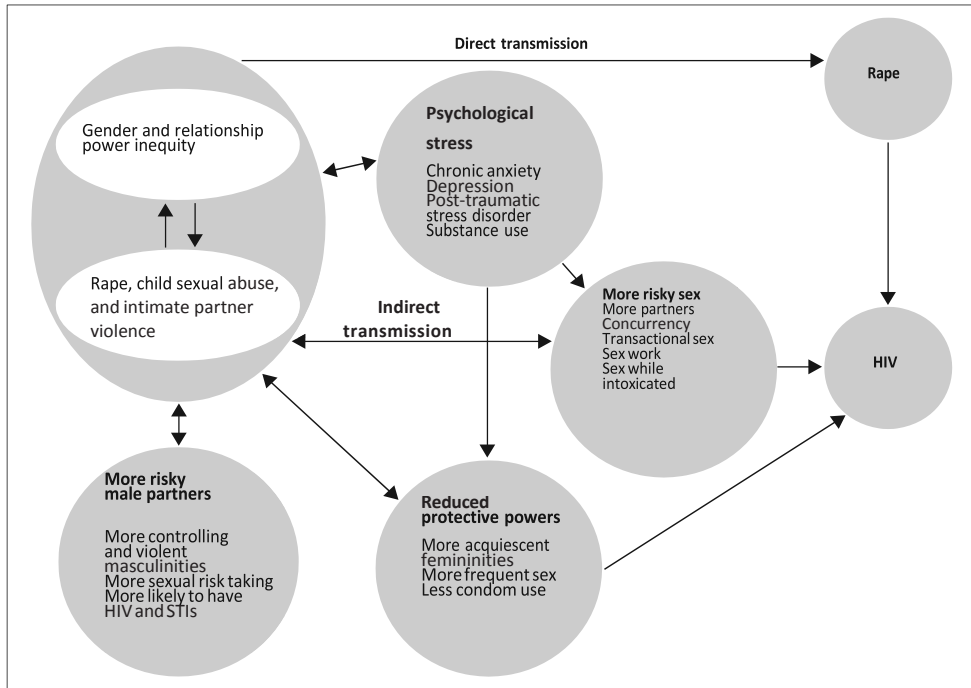
There is a close link between violence against women and HIV infection. Women who are beaten by their partners have a 48% higher chance of infection with HIV (UNAIDS, 2011). There are various levels at which violence and HIV infection are connected, such as biological, cultural, and economic, with gender influences at and between the various levels. It is important to understand the various pathways to HIV infection. Prevention strategies cannot only focus on individuals to initiate change and to maintain healthy sexual behaviour in order to reduce HIV infections, especially not in a context of violence. Rather, interventions need to acknowledge and address the influence of both the individual, and the wider social, political and economic context, if change is to be achieved.

1.5.1 Visual overview of possible pathways to HIV infection-risk

Figure 1 shows an overview by Jewkes and colleagues (2010) of how gender- and relationship inequity can lead to violence and subsequent HIV infection. The overview shows how relationships involving controlling and violent male partners (who are more likely to take greater sexual risks, and who are more likely to have HIV) can lead to power inequities in the relationship and subsequently to violence against the female partner.

Sexual violence such as rape can directly lead to HIV infection, but there are also indirect pathways. A consequence of physical violence can be the development of psychological problems such as depression and anxiety, which can all lead to more risky sex, thereby increasing the chances of HIV transmission. Gender inequity and psychological problems can also lead to reduced protective power on the part of the woman. This means she has limited or no say in the sexual relationship, for example about condom use, which also

increases the risk of infection. The following paragraphs discuss the biological, cultural and economic connections with HIV.



STIs=sexually transmitted infections.

Figure 1: Pathways through which gender-based violence and gender and relationship power inequity might place women at risk of HIV infection (adapted from Jewkes et al, 2010).

1.5.2 Biology and HIV

Women are approximately twice as likely to contract HIV infection from men as men are from women during vaginal intercourse (Chersich & Rees, 2008; Higgins, Hoffman, & Dworkin, 2010; Wira & Fahey, 2008). This is also reflected in the fact that in sub-Saharan Africa more women than men are living with HIV (59% resp. 41%, figures for 2010) (World Health Organization, 2011). Among the biological explanations for this are the facts that women are for longer periods exposed to infectious fluids after vaginal intercourse than men (Higgins et al., 2010), that semen contains a higher concentration of HIV than vaginal fluid

(NAM Aidsmap, 2014), and that women during ovulation might have a higher chance of contracting HIV infection (Wira & Fahey, 2008). In all women there is a risk of tissue injury during sexual intercourse, but this is especially so for young women because of an immature cervix, thus increasing the risk of infection (Türmen, 2003). When violence is involved, the risk of tears and injuries is even greater. When anal sex is practiced in order to maintain virginity, which might be especially relevant to younger girls, the risk of HIV transmission is higher than with vaginal sex (Halperin, 1999). The biological vulnerability of especially young girls underscores the importance of assisting them to delay first coitus and to negotiate consistent partner condom use (Sherr, 1993).

1.5.3 Culture and violence

In many African societies, male control of women and notions of male sexual entitlement feature strongly in the dominant social constructions of masculinity (Jewkes & Abrahams, 2002). Patriarchy, unequal power- and economic positions, low female status as expressed in for example inheritance procedures, all contribute to supposedly justified male dominance over women (McCloskey, Williams, & Larsen, 2005). Young people's perceptions of social norms regarding sexuality, endorsed by their social environment, might pressure them into engaging in sexual relationships. Young girls' relationships with older men can be characterised by unequal power positions, rendering them vulnerable to abuse and subsequent sexual- and reproductive health problems (Silberschmidt & Rasch, 2001). However, cultural views do not exist in isolation and can be fluid. Young people grow up between traditional and modern views on sexuality, with competing moral regimes (Dilger, 2003). Therefore culture is not static and neither are views on sexuality, which across time and settings can be adapted and adjusted.

1.5.4 Economics and violence

Socioeconomic changes in recent decades in many African societies have affected traditional gender roles. Unemployment or low income of the male partner may require increased labour participation of women, which can bring friction into relationships. In order to strengthen their self-esteem, men may resort to violence against their partner, or take up relations with multiple partners (Silberschmidt, 2001). In addition, women often have restricted inheritance rights, limited access to and control over land, information, technology, and financial capital, which affects women's autonomy and economic status (World Bank, 2001). Poverty or a desire for luxury goods could drive young women into unequal sexual relationships for monetary benefits, leaving them vulnerable to abuse (Silberschmidt & Rasch, 2001).

In conclusion, violence against women and HIV infection is a complex issue that crosses and interacts on various levels: personal, relational, and structural. Women in particular are affected, amongst others because of a higher biological vulnerability to HIV, because of cultural norms that explicitly or implicitly condone violence against women, and because of socioeconomic conditions in society.

1.6 Theories and risk factors of intimate partner violence

Since the late 1960s and early 1970s the issue of violence against women has come to the foreground of political and research attention. First it was mostly seen as a feminist issue, pushed by the women's movement; later also as a political and human rights matter. In recent years the paradigm has shifted to a socio-ecological understanding of violence against women. The socio-ecological model posits that "violence emerges from the interplay of multiple interacting factors at different levels of the social 'ecology'" (Heise & Fulu, 2014).

1.6.1 Various theories on intimate partner violence

Various theories for intimate partner violence have been developed throughout the years, depending on discipline, and with different policy implications. A distinction has been made between micro- and macro- oriented theories: micro-oriented theories focus on intra-individual and social psychological explanations, while macro-oriented theories focus on sociocultural explanations (Jasinski, 2001). Examples of micro-theories on the etiology of violence are the Social Learning Theory by Bandura (Bandura, 1969), theories on personality characteristics & psychopathy (Dutton, 2006) and biological/physiological explanations (Janssen et al., 2005). Examples of macro-theories are the feminist theory on the concept of patriarchy (Dobash & Dobash, 1979) and a systems theory of family violence (Straus, Gelles, & Smith, 1990). An illustration of an application of the Social Learning Theory is the “background-situational” model (Riggs & O’Leary, 1989) that aims to predict dating violence by means of violence-related background variables, such as childhood family violence, communication skills, alcohol use, and relationship satisfaction. Research shows that it accurately classifies female perpetrators about 80% of the time, but only accurately classifies male perpetrators 30% of the time (Luthra & Gidycz, 2006).

1.6.2 Ecological model of violence against women

In recent years, multidimensional theories have been developed, that combine individual and social factors in manifestations of violence (Jasinski, 2001). An example of such a multidimensional model is the ecological model of violence against women (see Figure 2) (Heise, 1998). This model is used to understand the interaction of factors at the personal, situational, and sociocultural level, which combined, result in abuse (Heise, Ellsberg, & Gottmoeller, 2002).

The model consists of four levels: individual, relational, communal and structural. The first level comprises the biological and personal history of the individual. The second level represents the immediate context of the individual, including close relationships with partners and family. The third level represents the wider community, such as neighbourhoods, the workplace, social networks and peer groups. The fourth level comprises factors at the structural level, such as the cultural, social, and economic environment (Heise et al., 2002).

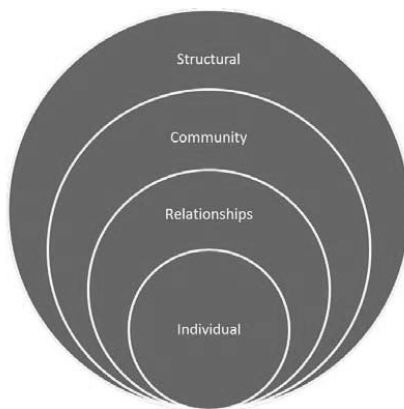


Figure 2: Ecological model of violence against women (adapted from Heise et al., 2002).

The ecological model for violence cannot be measured or tested as such, rather it conceptualises how violence is embedded at various levels, and how the individual exists and interacts within immediate and distal contexts that co-exist simultaneously and influence each other. Integrating knowledge coming from separate studies at the various levels contributes to a more comprehensive understanding of the occurrence of violence in society and relationships. This PhD study looks at violence from an ecological point of view: violence is not just the behaviour of an individual, but it exists in the interaction with significant others, and in the wider context of culture, social norms, and poverty, to name a few.

1.7 Review of previous studies

In this section empirical research on intimate partner violence is reviewed and linked to the research questions in the three papers coming out of this PhD study. The causes of violence are complex, and the selection of factors listed in this review is by no means exhaustive. It shows, however, how factors of various natures influence violence, not only at one specific level but rather as products and change agents of other levels as well. It has to be noted though that much of the research in the field, and many of the studies mentioned in this review below, are from the global north and have a cross-sectional design, and that there is a lack of longitudinal studies from the global south on partner violence. Still, although the studies mentioned in this section have their limitations with regard to identifying and describing causal factors and processes leading to violence, they do provide insight into the factors associated with violence at particular time points.

1.7.1 Literature search strategy

Literature was searched through the many databases and search engines available through the Bergen University Library, such as PubMed (Medline), Cochrane, and Google Scholar. Standard search strategies were done by searching databases for keywords, while making sure that a variety of synonyms and words similar to the keyword was covered. For example intimate partner violence, partner violence, dating violence, gender-based violence, partner abuse, relationship violence, etc. Bibliographies of relevant articles were also examined for other suitable articles. The contents of recent volumes of central journals were also checked. Retrieved articles were assessed for their quality and relevance.

1.7.2 Empirical findings relevant to our study

In paper I the focus was on prevalence of dating violence and associated factors. In South Africa, 25-39% of the girls and young women (aged 15-26) have experienced some type of violence by an intimate partner (Jewkes et al., 2010; Russell et al., 2013). In Tanzania, lifetime prevalences for intimate partner violence against women range from 39.2% for physical violence, 17.2% for sexual violence to 43.6% for sexual and physical violence combined (UN Women, 2013).

When children **grow up exposed to domestic violence**, either by watching parents fight, or by being abused themselves, they are more likely to become victims or perpetrators themselves later on in life (Abramsky et al., 2011; Campbell, Alhusen, Draughon, Kub, & Walton-Moss, 2011; Kouyoumdjian et al., 2013; O'Leary, Tintle, & Bromet, 2014). While this link is well established, less is known about the mechanism through which early exposure to violence increases future perpetration (Heise & Fulu, 2014). One pathway could be through social learning: children observe violence and internalize ideas about violence being an appropriate and effective way of handling conflicts, and if there is no punishment connected to the violence, can incorporate aggression in their behaviour (Bandura, 1978).

A young **age** for both victims and perpetrators is associated with IPV (Abramsky et al., 2011; Campbell et al., 2011; Kouyoumdjian et al., 2013). Campbell and colleagues' study from the US (2011) shows that like victimization, perpetration is also more common among youths that are younger; since they are likely to be in relationships with same age peers, victims will often also be relatively young. However, the age dynamic could be different in areas in sub-Saharan Africa, where young girls sometimes may seek out older men for financial reasons, thereby being more at risk of violence (Kuate-Defo, 2004; Silberschmidt

& Rasch, 2001). Linked to age is marital status, which in turn is linked to IPV in different ways across the globe: in countries where marriage is the norm, and sexual relations take place within marriage, violence is more strongly associated with marriage. In countries where premarital sex is the norm, violence is not associated with marital status (Jewkes, 2002). A lower age at sexual debut, which is likely to be outside marriage, is also associated with victimization (Kouyoumdjian et al., 2013).

Studies have found lower **education** levels to be associated with IPV (Abramsky et al., 2011; Kouyoumdjian et al., 2013). When parents have not completed a formal education or have completed a lower education, there is greater risk for their children to become a victim of violence (Abrahams & Jewkes, 2005; Swart, Seedat, Stevens, & Ricardo, 2002).

However, higher education is not necessarily protective against violence either; sometimes higher education can even increase the risk of victimization (Abramsky et al., 2011; Jewkes, 2002).

Lower **socioeconomic status** is associated with more risk for perpetrating or receiving violence (King et al., 2004). The association between IPV and low income may reflect a lack of resources making it difficult for the woman to escape the relationship (Campbell et al., 2011). A higher educated female partner could be felt as a threat by their male partner, with subsequent male use of violence against the female to establish the male's dominant position in the relationship.

Religion has been found to be protective against relationship violence (Borowsky, Hogan, & Ireland, 1997; Resnick, 2004). Growing up in **single-parent families** without stable parental role-models is associated with increased risk (King et al., 2004; Madu, 2002). **Mental health**

problems can also be linked to victimization and perpetration. For example, individuals with mental disabilities can be vulnerable to become victims of violence (Campbell et al., 2011). Disorders involving anger control failure have been linked to perpetrators (O’Leary et al., 2014). In addition, drugs and alcohol use increase the risk of victimization and perpetration (Campbell et al., 2011; Kouyoumdjian et al., 2013).

In paper II the relationship between **attitudes towards violence** and actual violent behaviour was examined. The relationship between attitudes towards partner violence and being violent towards one’s partner deserves attention. Many violence prevention programmes are – implicitly or explicitly – based on the assumption that changes in attitudes and beliefs will lead to changes in violent practices (Avery-Leaf, Cascardi, O’Leary, & Cano, 1997; Foshee et al., 2004; Macgowan, 1997; Pacifici, Stoolmiller, & Nelson, 2001).

In social psychology research on the attitude-behaviour relationship has long traditions. Allport’s (1935) classic definition of attitudes was based on the assumption that attitudes cause behaviour. Some researchers have supported this view, but suggested that behavioural intentions mediate this relationship (Fishbein & Ajzen, 1975; Fishbein & Ajzen, 2010). Bem (1967) maintained that the causality can be reversed, that attitudes may reflect (or justify) behaviour. Festinger’s (1957) theoretical framework is consistent with the notion that the relationship between attitudes and behaviour is bi-directional. Bandura (1969) argued that environmental influences may have similar but independent effects on feelings, beliefs and behaviour. Consistencies between beliefs and behaviours may represent correlated coefficients. These examples illustrate well the diversity of possible theoretical explanations of the attitude-behaviour relationship.

One of the few studies measuring the correlates of partner violence behaviours among high school students in a developing country (South Africa), found that cross-sectionally, positive attitudes about partner violence were associated with violence intentions $\beta = .523$ ($p = .004$), and with violent behaviour $\beta = .641$ ($p < .001$) (Flisher, Myer, Merais, Lombard, & Reddy, 2007). A HIV prevention programme from Africa, called Stepping Stones (Jewkes et al., 2008) focused among other things on changing attitudes towards gender relations and relationship control, although they did not report on the attitude-behaviour relationship specifically. Still we mention the study here because it is one of the few longitudinal RCT's in a developing country setting studying violence. It found downward trends on young males' (15-16 years old) violent behaviour after 12 and 24 months, however these findings were not statistically significant. A prospective study among adolescent males in the USA showed that positive attitudes towards violence predicted increased violence against women (odds ratio 1.9 $p = .0001$) (Lanier, 2001). Robertson and Murachver (2009) did a qualitative study of violent attitudes in New Zealand among university students, members from the general population and incarcerated participants; they found that both victims and perpetrators were more likely to have attitudes condoning of IPV.

Although a number of other studies have shown the relationship between violent attitudes and violent behaviour, the majority tends to be from the developed world, with few studies done in developing countries. In sub-Saharan Africa, there is still a lack of consistent information on violent behaviour among youth (Andersson et al., 2004). In addition, there is a dearth of information on specific attitudes predicting violence (Uthman, Lawoko, & Moradi, 2009). Also, there is a lack of longitudinal data making it impossible to determine the direction of this relationship. The majority of studies tends to be cross-sectional or short-term only, unable to show long-term changes, and are generally of poor quality (Whitaker et

al., 2006). Many studies that do have a long-term focus utilize databases like national demographic health surveys, lacking the advantages of cohort data (Speizer, 2010; Uthman, Moradi, & Lawoko, 2009).

Attitudes are formed and shaped within geographical and socio-cultural settings; perhaps growing up in adverse circumstances leads to violence-accepting attitudes, predisposing one to abuse (White & Kowalski, 1998). Another pathway could be from abuse to attitudes, where victims who previously had no experience with violence, form attitudes on the basis of the abuse. These attitudes can potentially be accepting of violence, especially if victims experience loss of control and helplessness (White & Smith, 2001).

Violence-supportive attitudes against women predict both victimization and perpetration (Abramsky et al., 2011; Kouyoumdjian et al., 2013). Studies have found both men and women to agree that violence is justified if the woman for example argues with her spouse, neglects the children, or goes out without telling the spouse (Hindin, 2003; Rani, Bonu, & Diop-Sidibe, 2004). Where such attitudes are common, the acceptability and occurrence of violence is likely to be common, too. Since attitudes are formed and shaped within geographical and sociocultural settings, growing up in adverse circumstances could lead to violence-accepting attitudes, predisposing one to abuse (White & Kowalski, 1998).

Attitudes towards violence can be influenced by views on **masculinities**, or ideas of what it means to be a man, are formed based on social, historical, geographical influences. These masculinities can entail different things such as being able to provide financially for the family, to be strong and powerful, and to be sexually virile. When men are unable to live up to this masculine identity, for example because of poverty, this might create stress and

frustration leading to violence against women (Jewkes, 2002). It has been suggested that interventions targeting violence against women will not be successful unless critical factors such as male unemployment are being addressed as well (Ratele, 2008). Research from South Africa shows that many violent men have in the past been both abuser and victim, and that adopting violent masculinities helps them achieve respect and power (Jewkes, Sikweyiya, Morrell, & Dunkle, 2009; Mathews, Jewkes, & Abrahams, 2011).

Attitudes may be influenced by the context in which people live. In **collectivistic** societies greater strength is put on social expectations and pressure to comply with these expectations than in individualistic societies (Campbell, 2003; Markus & Kitayama, 1998). Most Latin American, Asian, and African cultures are regarded collectivistic, as opposed to North American and Northern and Western European cultures that are regarded **individualistic** (Triandis, 1989). Still there can be a range on this variable within countries: for example in urban settings people tend to be more individualistic than in rural settings (Triandis, 1989). Collectivism and individualism are also associated with affluence; in affluent, culturally complex societies individualism tends to be stronger than in more simple, agricultural cultures. This is also related to reduced size of families in affluent societies, which increases the opportunity to raise children to be individualists (Triandis, 1989). Individualistic cultures tend to be more 'loose' and collectivistic cultures 'tight', indicating the level of tolerance for diverse behaviour. Women in loose individualistic societies have more work- and lifestyle options available to them than women in tight collectivistic societies (Yoshioka & Choi, 2005). This has implications for intimate partner violence, women in tight collectivistic societies have less access to divorce, independent living, and single parenthood than women from loose individualistic cultures (Yoshioka & Choi, 2005). Although the three papers in

this PhD do not specifically address issues like masculinities and collectivist aspects of the societies studied, these perspectives are still important in order to throw light on the findings.

In paper III the focus was on the importance of the Theory of Planned Behaviour (TPB) variables in predicting early sexual debut. The TPB and the theoretical framework of this PhD study are discussed in the next section. With regard to **sexual debut**, in South Africa and Tanzania at least half of young people are sexually active by age 16 (Eaton, Flisher, & Aaro, 2003; Munguti et al., 1997). Early first intercourse is associated with violence; the younger a person is at first intercourse, the more likely it is that force is involved (Watts & Zimmerman, 2002). Studies on forced sex in South Africa and Tanzania found that 40% and 28% of women, respectively, reported that their first sexual intercourse was forced (Watts & Zimmerman, 2002). Early sexual debut carries a higher risk for a number of reproductive health problems: teenage pregnancy, high number of sexual partners, inconsistent condom use, and HIV transmission, to name a few (Pettifor, van der Straten, Dunbar, Shiboski, & Padian, 2004). In order to effectively focus preventive efforts regarding sexual- and reproductive health of young people, it is important to determine what factors influence sexual debut. This study examines psychosocial factors in particular, such as attitudes and social norms, as well as the influence of violence on early sexual debut.

Much of the research on the **Theory of Planned Behaviour (TPB)** comes from the United States. Carvajal et al (1999) in their study of psychosocial predictors of delay of first sexual intercourse among adolescents found that positive attitudes, positive social norms, and having a parent with college education, decreased the risk of early initiation. Their recommendations were to focus on attitudes and social norms in interventions. Another study from the US (DiIorio et al., 2001) found that friends' perceived attitudes were the most

important predictors for delayed intercourse and abstinence. However, none of these studies measured intentions specifically. Studies that have measured intention to have sex found intentions to be the strongest predictor of sexual initiation among adolescents (Buhi & Goodson, 2007; Kinsman, Romer, Furstenberg, & Schwarz, 1998; Villarruel, Jemmott, Jemmott, & Ronis, 2004), followed by youths' perceptions of social norms (attitudes and behaviour of peers and parents) (Buhi & Goodson, 2007).

Research from Africa on the use of social cognition theories for the prediction of sexual behaviour is scarce. Some authors have shown that such theories can be applied to African settings (O'Leary et al., 2012; Protogerou, Flisher, Aarø, & Mathews, 2012), while others have criticised the use of Western theories in non-Western settings (Campbell, 2003). With regard to predicting first sexual intercourse in sub-Saharan Africa, there is a dearth of prospective studies on sexual debut that utilise the TPB. Mathews et al (2009) found that intentions to have sex, poor self-efficacy to negotiate delayed sex, and intimate partner violence significantly predicted sexual initiation among adolescents in Western Cape, South Africa. The association between intention and reported behaviour was, however, weak. To the best of our knowledge, there are no other prospective studies on early sexual intercourse that have made use of the TPB. The TPB has been used with regard to *other* sexual and reproductive health issues in sub-Saharan Africa though, such as condom use. Condom use among young people in various studies from South Africa, Tanzania and Ethiopia was predicted by intentions and attitudes (Bryan, Kagee, & Broaddus, 2006; Molla, Nordrehaug Åstrøm, & Brehane, 2007). Intention to use condoms was predicted by attitudes, injunctive norms and self-efficacy (Schaalma et al., 2009). The standardised regression coefficients for these studies above ranged between -0.14 and 0.28. The negative coefficient is due to the response structure of the attitude items in that particular study, which ranged from 1 –

completely agree to 5 – completely disagree (Molla et al., 2007). Although these coefficients are rather low, they still predict significantly the pathways from social cognition variables to condom use intentions and -behaviours. This supports the notion that social cognition models can be applied in African contexts.

Studies have brought out a number of other variables important to the relation between violence and sexual debut. Approval of spousal abuse has been found to be related to early sexual debut in communities where there is widespread tolerance of violence (Speizer, 2012). Such collective attitudes of justifiable violence are likely to influence the individual to agree with violent behaviour, either as victim or perpetrator (Waltermaurer, 2012). It would also be less likely for individuals to report violence to authorities, if social norms are accepting of violence (Waltermaurer, 2012).

1.8 Theoretical framework SATZ study

This thesis is based on three papers that came out of the SATZ study (acronym for South Africa and Tanzania), a school-based health education programme targeting sexual- and reproductive health issues. The SATZ study is described more in-depth in the Method chapter. The theoretical framework of the SATZ study is taken from various behaviour change models, such as the theory of Social Cognitive Theory (Bandura, 1986), the Theory of Planned Behaviour (Ajzen, 1985), and the Attitude-Social influence-Efficacy model (Vries de, Dijkstra, & Kuhlman, 1988). In the first two papers these models are used mainly to inform the research rather than to apply and test them, while in the third paper the Theory of Planned Behaviour was modelled specifically.

These models mentioned above mainly focus on individual behaviour, but at the same time move through various layers of the ecological model. For example, the Theory of Planned Behaviour (Fishbein & Ajzen, 2010) intends to predict individual behaviour, but also takes into account influences at the social environment level (as perceived by the individual study informants) and to some extent also from the more structural level (for example through the perceived behavioural control factor).

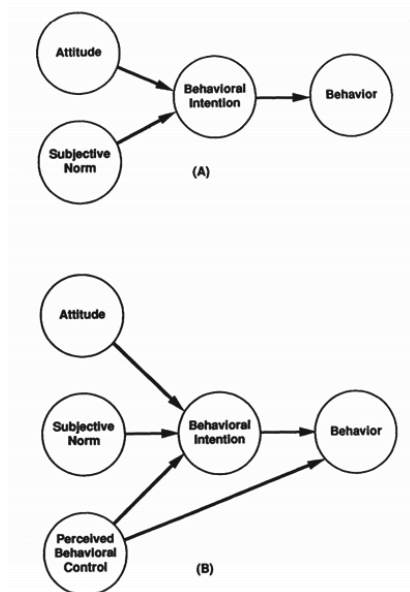


Figure 3A: Theory of Reasoned Action (Ajzen & Fishbein, 1980).

Figure 3B: Theory of Planned Behaviour (Ajzen, 1985).

Figures adapted from Madden, Ellen and Ajzen (1992).

The Theory of Planned Behaviour (1985) was based on its predecessor, the Theory of Reasoned Action (1980). The Theory of Reasoned Action (Figure 3A) states that behaviours are under the influence of intentions. Intentions, in turn, are under the influence of attitudes and subjective norms. These are formed by sets of behavioural beliefs and normative beliefs. Behavioural beliefs influence attitudes and normative beliefs influence the subjective norm

about the behaviour (Madden et al., 1992). While the Theory of Reasoned Action specified factors influencing pure volitional control, the Theory of Planned Behaviour (Figure 3B) extended this by including perceived behavioural control (Madden et al., 1992). This is the perception of behavioural control, and of the resources and opportunities impeding or facilitating the behaviour (Ajzen, 1991). Perceived behavioural control is formed by control beliefs. Ajzen (1991) considered perceived behavioural control as compatible with Bandura’s concept of self-efficacy: “the judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982). In later years, the theory was further modified by Fishbein and Ajzen (2010) to the model below (Figure 4).

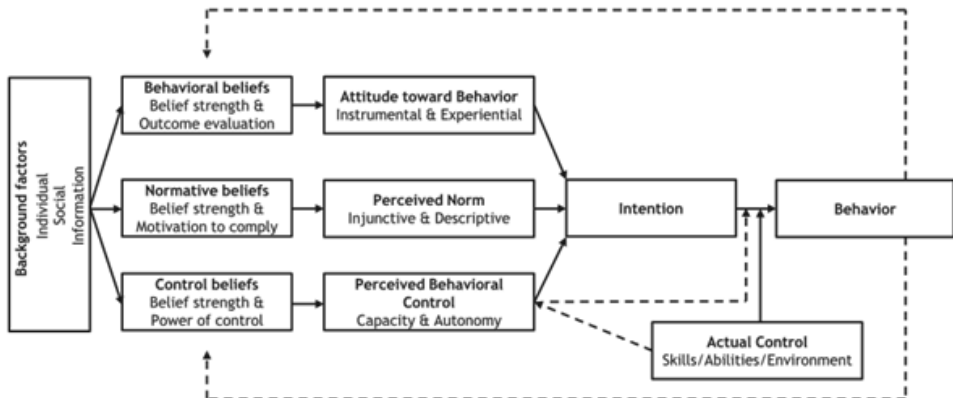


Figure 4: Schematic presentation of the Theory of Planned Behaviour (Adapted from Peters, 2015).

The Theory of Planned Behaviour (2010) includes background factors relevant to the individual, such as personality and demographic characteristics. These individual differences can influence the experiences people have and the beliefs they hold about the behaviour under consideration. These beliefs guide whether or not a person will perform the behaviour. The theory distinguishes between *behavioural beliefs* (positive and negative outcomes

expectancies of the behaviour), that determine a person's *attitude* toward personally performing the behaviour, *normative beliefs* that determine *perceived norms*, and *control beliefs* that determine *perceived behavioural control*. Fishbein and Ajzen (2010) state that attitudes have *instrumental* and *experiential* aspects. Instrumental attitudes refer to anticipated positive or negative consequences of the behaviour. Experiential attitudes refer to perceived positive or negative experiences of the behaviour (Fishbein & Ajzen, 2010). Normative beliefs encompass two types of beliefs: *injunctive normative beliefs* about whether important others would approve or disapprove of the behaviour, and *descriptive normative beliefs* about whether these others themselves perform the behaviour. These descriptive norms were taken from the Integrative Model by Fishbein (2000). In addition, the TPB includes beliefs about personal and environmental factors that can help or hinder performance of the behaviour. These beliefs result in *perceived behavioural control*, the perception of the degree to which people are capable, or have control over, performing a behaviour. Perceived behaviour control has two aspects: *capacity*, the belief that one is able or capable to perform the behaviour, and *autonomy*, the perceived degree of control over performing the behaviour (Fishbein & Ajzen, 2010). Attitudes, perceived norms and perceived behavioural control altogether guide *intentions* and *behaviour*. More specifically, they lead to a *behavioural intention*, or a *readiness to perform the behaviour*. The intention to perform the behaviour will likely be stronger when the attitudes and perceived norms are more favourable, and the perceived behavioural control greater. Still, this also varies with the type of behaviour and the setting (Fishbein & Ajzen, 2010). Although one can have a strong behavioural intention, there can be factors promoting or impeding the behaviour, such as skills and abilities, and environmental factors (i.e. *actual control*). The model is currently known as the Theory of Planned Behaviour.

Based on a review of previous studies, Wicker (1969) concluded that often the association between attitudes and behaviour is close to zero. Ajzen and Fishbein (1977) and Ajzen (1988) have, however, criticized the way attitudes and behaviour traditionally were measured, and stressed the principle of *compatibility*. Any single action can be understood as involving an action directed at a target, performed in a given context, at a certain point in time. The principle of compatibility requires that measures of attitudes and behaviour involve exactly the same action, target, context, and time elements, and that the levels of specificity must correspond. Lack of associations between measures of attitudes and measures of behaviour may stem from incompatible levels of specificity or lack of such specification.

1.9 SATZ study sites

There were three study sites in the SATZ study, two in South Africa and one in Tanzania. In South Africa the intervention was done in Mankweng area, close to Polokwane, Limpopo Province, and in the Western Cape and Cape Town in the Western Province. The study in Tanzania was done in the city of Dar es Salaam, in the Kinondoni district. Table 1 shows an overview of a few selected characteristics of the sites. Western Cape with the regional capital Cape Town is a more urbanised, Western and individualistic area than the other two sites, while Polokwane is a large town in a rural area, and Dar es Salaam a large city more characterised by a collectivistic society.

In the Western Cape, the schools involved in the SATZ project came from all the eight Cape Town sub-districts and they varied from very poor with predominant informal housing, to middle-to-low socioeconomic status. None of the schools were situated in very wealthy areas, and none of the schools were private.

Table 1: Overview selected characteristics Western Cape, Limpopo (South Africa) and Dar es Salaam (Tanzania)

	Western Cape	Limpopo	Dar es Salaam
Population	6.1 million*	5.6 million*	4.4 million**
	3.7 million in Cape Town*	630,000 in Polokwane city*	1.8 million in Kinondoni district**
Unemployment	24.5%***	46.0%***	46.5%****
HIV rates	25.0-39.9%† (pregnant women)	10.0-24.9%† (pregnant women)	9.3%‡ (men and women 15-49 years)
Fertility rate	2.1§	3.5§	Urban 3.7 Rural 6.1§§

* Statistics South Africa (2014)

** National Bureau of Statistics Tanzania (2012)

*** Portfolio Committee (2011)

**** Shaidi (2006)

† UNAIDS (2010)

‡2007/08 Tanzania HIV/AIDS and Malaria Indicator Survey (Tanzania Commission for AIDS, 2008)

§ Statistics South Africa (2010)

§§National Bureau of Statistics Tanzania (2011)

The Kinondoni district in Dar es Salaam is a partly urban and partly semi-urban area with a mixture of both poor and affluent residential areas. Since only public schools were involved in Dar es Salaam, students from well-off families were under-represented. The schools in the Polokwane area came from Mankweng, which is a rural area about 30 km from Polokwane.

1.10 Research objectives of the papers

The three papers coming out of this study address the following more specific objectives:

Paper I: To describe the prevalence of dating violence in young adolescents in Cape Town, Mankweng and Dar es Salaam. Furthermore, to document associations between, and overlap with, victimization and perpetration, as well as associations with socio-demographic factors.

Paper II: To examine the relation between attitudes towards violence and actual violent behaviour among school students in Cape Town and Mankweng in South Africa, and Dar es Salaam in Tanzania, cross-sectionally as well as with a special focus on prospective

prediction of both attitudes and behaviour. This relation was examined separately by site and gender.

Paper III: To examine the importance of the Theory of Planned Behaviour variables in predicting early sexual debut. We also look at to what extent exposure to violence (as victim) and selected sociodemographic factors predict the transition to sexual intercourse. In particular we want to examine the predictive power of social cognition predictors when controlling for sociodemographic variables as well as exposure to intimate partner violence.

2. Methods

2.1 Design

All three studies in this thesis employ data material from survey data collections done in the SATZ research project. This project included large-scale, randomised controlled trials (RCT) done in three sites. RCT's are regarded as one of the strongest research designs, and the best way of testing the efficacy or the effectiveness of interventions. In the present study, the samples consisted of participants from both control and intervention group (in paper I) and from the control group only (in paper II and III). There were three data collection waves, making it possible to study processes of change over time, and throw light on issues beyond what can be done in a cross-sectional study. Such a multi-site prospective panel survey can be regarded as a strong research design in itself. It bears some comparison to a cohort study where a sample is followed on multiple occasions over time, although usually this covers a longer period and more data collection occasions than in our study.

Various designs are possible with the data in our study. In each site, data from baseline surveys constitute a cross-sectional survey of adolescents' sexual- and reproductive health behaviours and relevant correlates. We also have cross-sectional surveys if data is used from each of the follow-up data collections from the control group in each site. When analyzing such cross-sectional data across all three sites, we have multi-site cross sectional studies. In each site separately, data from students in the control schools across the three data collections represent a prospective panel study, and if we also include all three sites in such analyses we have a multi-site prospective panel study. If data is used from one site only, but

both groups (intervention and control) are included, as well as all three data collections, we have a cluster-randomized experimental design with one baseline and two follow-up data collections. And finally, using all available data, we have a multi-site cluster randomized experimental design with one baseline and two follow-up data collections. From this it should be obvious that data from the SATZ study can be used in a number of different ways, as cross-sectional studies and as a prospective panel studies, providing opportunities to examine several research issues in addition to evaluating the SATZ interventions.

2.2 The SATZ study

This thesis is based on three papers that came out of the SATZ research project (acronym for South Africa and Tanzania). This project focused on evaluating effects of a school-based health education programme targeting sexual- and reproductive health issues. The project received funding from the European Commission between 2002 and 2006 (Fifth Framework Programme-ICA4-CT-2002-10038). The aim was to develop, implement and evaluate a school-based health education programme involving sexual and reproductive health for students aged 12-14 years at each of the sites, and a central aspect was to reduce the risk of being infected with HIV (Aarø et al., 2006). This was done through large-scale, cluster randomized controlled trials in three sites with parallel interventions and parallel data collections (n=15,864).

2.3 Sampling

A total of 80 schools were paired according to size, geographic area, and sociodemographic characteristics, after which they were randomly assigned to the intervention or the control arm conditions. After a baseline data collection, there were comprehensive, school-based interventions in the intervention schools in all sites. After about six months there was a first

follow up data collection, and after 12-15 months there was a second follow-up data collection. Between the follow-up data collections there were booster activities in all three sites. Control schools received a shortened, delayed intervention slightly more than a year later than the intervention schools.

2.3.1 Selection and randomisation of schools

All 213 high schools in Cape Town had been stratified by postal code and 39 were selected. The sampling frame comprised a stratified random sample of 39 public high schools previously selected to be representative of all public school in Cape Town in terms of socioeconomic level, 'racially' classified social group and language, to participate in surveillance. Fifteen schools were selected randomly from this sampling frame. These schools were matched to 15 other high schools based on student population size and demographics, language and school location, ensuring that the schools in a pair were not located close to each other. In Mankweng, schools were selected randomly from the 63 high schools in the Mankweng Education Circuit. They were then paired according to geographical location (urban, peri-urban or rural) and the level of school resources and amenities. In Cape Town and Mankweng, one school in each pair was randomly allocated to the intervention arm of the study by putting the school names in a container, one pair at a time, and drawing the one to be the intervention school. In Dar es Salaam, all 108 primary schools in the Kinondoni Municipality were paired, matching them by geographical location (urban or rural) and the number of students at the school, and ensuring that those in a pair were not in close proximity. Twelve pairs were randomly selected. A member of the research team who did not know the schools numbered the schools in each pair and randomly assigned one to the intervention condition using a table of random numbers. In Cape Town

all grade 8 students, and in Mankweng all grade 8 students who were 12–14 years old, were invited to participate in the trial. In Dar es Salaam, a sample of 6000 grade 5 and 6 students (3000 per study arm) were selected randomly for the survey, so that the number of students in each school was proportional to the school size.

2.3.2 Sample size and inclusion criteria

In total the SATZ study included 15,864 students, for all three data collections taken together. Of these, about 80% completed all three data collections. At baseline there were 15,782 participants in the sample, of which $n=98$ were removed because of a lack of valid indication of school number. That left $n=15,684$ participants. Mathews and colleagues (2012) have also reported more closely on the sample size of the SATZ intervention.

In paper I, the sample size at baseline was $n=15,684$, of which $n=8,705$ were removed because they had never been in a relationship, while all the questions on violence pertained to violence to and from boy/girlfriends. To avoid inconsistencies in answers, it was decided to remove those participants that reported never having had a boy- or girlfriend. In paper I the baseline item on self-reported relationship experience was cleaned with help of the same item at follow-up 1 and 2, whereby last answer was believed. That meant that if there was a confirmatory answer on relationship experience at baseline, but a negative one at the follow-ups (with the decisive answer at follow-up, if available), the baseline answer was changed to 'never had boy/girlfriend'. By doing so, the sample size was reduced to $n=6,979$ (Cape Town $n=3,796$; Mankweng $n=2,607$; Dar es Salaam $n=567$). The sample size was particularly reduced in Dar es Salaam after the cleaning, perhaps because of less correct reporting caused by a younger age on average as compared to the other two sites. Paper I

included participants from both the control and intervention arm of the study since only baseline data was used, and there was no need to differentiate between the groups.

In paper II only participants from the control group of the study were included, since this was a prospective study in which natural changes occurring in the general population were studied. Again we started with the baseline sample size of $n=15,684$. It was decided however to use the original relationship experience variable at baseline, and not the cleaned one that was used in the first paper. The cleaning process of that variable encompassed some uncertainties, on the one hand later answers at follow-up 1 and 2 were believed because students were older and more likely perhaps to tell the truth, but on the other hand they could also have become less truthful since they were more aware of negative social repercussions of having a boy/girlfriend. In any case, the original baseline variable on relationship experience was applied as a selection criterion in paper II. The control group sample size was $n=7,274$ of which $n=3,334$ were removed because of lack of relationship experience, leaving $n=3,940$ in the sample (Cape Town $n=1,803$; Mankweng $n=1,591$; Dar es Salaam $n=546$).

In paper III the sample size started out slightly smaller ($n=12,139$). This was due to the fact that in Mankweng there had been oversampling at baseline, and not all of the sampled students were supposed to finish the entire study. This group of 'oversampled students' consisted of $n=3,545$ students, and after removal from the total group of $n=15,684$, $n=12,139$ participants were left in the sample, of which $n=5,878$ in the control group (Cape Town $n=2,354$; Mankweng $n=1,313$; Dar es Salaam $n=2,211$). This oversampling in Mankweng also pertained to paper I and II, but in those papers we had not put in place special inclusion criteria to factor in the oversampling. In paper I this was not so important since only baseline

data was included. In paper II it was neither a problem, since the students who were not followed up all had missing observations on all follow up variables, and would therefore have been excluded from regression analyses. In paper III we decided to apply the 'intended students' criterion simply to have a more precise sample size group at baseline. Had this criterion been omitted, results would still have been the same though. Further removed were $n=3,750$, because of lack of relationship experience, sexual debut already before the start of the study, because of age range outside the scope of the study (11-16 years), or because of no valid indication of age and gender. The final sample consisted of $n=2,128$ participants (Cape Town $n=1,379$; Mankweng $n=330$; Dar es Salaam $n=419$).

2.3.3 Data collection

Data collection took place over a 15-month period, from March 2004 to May 2005. Data were collected at schools at baseline and six months after baseline (in all sites), and 12 months (Dar es Salaam), 13 months (Mankweng), 14-15 months (Cape Town) after baseline. In Cape Town, hand-held computers were used for data collection, while in the other sites paper questionnaires were distributed. For the evaluation of the study, both qualitative and quantitative methods were used. In Mankweng, at each data collection occasion, the students answered the questions while being guided through the questionnaire question by question. All data collections were administered by trained data collectors from the local partner university. Teachers were not present in class during data collections, and no one at school had access to the questionnaires.

2.3.4 Data management

The quantitative data from each data wave were computerised by the respective sites, after which they were sent to the coordinator of the SATZ project at the University of Bergen for

further cleaning, quality control and storage. Cleaning of data included correcting language errors, and errors on order of the items, or number of item categories. This was done for example by collapsing categories, dealing with issues such as out-of-range values, reduction of the number of missing, outliers and inconsistencies. There was frequent communication between coordinator and partner institutions during this process. The data files from the sites and different data waves were merged into one file that was distributed to all sites, and that was used in all statistical analyses done by partners.

2.4 Scales and measurement

2.4.1 Straus Conflict Tactics Scales (CTS2)

In order to measure intimate partner violence, the Revised Conflict Tactics Scales (CTS2) was used in all three papers. The CTS2 consists of 39 items divided over 5 scales: Negotiation, Psychological aggression, Physical assault, Sexual coercion, Injury (Straus, Hamby, BoneyMcCoy, & Sugarman, 1996). Reliability ranges between .79 and .95 according to the authors, and there is evidence for construct validity (Straus et al., 1996). The scale is based theoretically on conflict theory, which assumes that conflict in human interactions is inevitable, but violent conflict resolution is not (Straus, 1979). The SATZ questionnaire included nine dichotomous items taken from the various scales, 5 items on victimization and 4 items on perpetration. For paper I, a dichotomy for experienced violence was constructed, based on the violence items, one for victims and one for perpetrators. The value “1” denoted involvement with such violence, while the value “0” denoted no involvement.

The CTS2 has been criticised for focusing merely on the prevalence of violence, while ignoring contextual factors. Still, this scale is used widely to research violence, enabling comparison across studies on prevalence of specific violent acts. And by including a wider range of contextual factors in our statistical analyses we can still put context to the scale.

2.4.2 Attitudes towards intimate partner violence scale

Associations between attitudes towards intimate partner violence and being a victim or perpetrator of violence were examined in paper II. The items on attitudes were developed for this study, inspired by previous studies, and piloted to assess face and content validity. The questions were tested for readability, relevance, language, comprehension, cultural- and age appropriateness (Mukoma et al., 2009). Factor analysis showed that for Dar es Salaam and Mankweng the factor structure was identical, while it was slightly different for Cape Town. Originally we intended to run analyses for paper II in MPlus, but decided instead to do GLM analysis in SPSS, with attitude sumscores. Principle Components Analyses on six attitude items based on the Cape Town data showed that there were two underlying dimensions (with Eigenvalues higher than 1.00) consisting of three items each: (i) gender role stereotyping (example item: a boy has to chase girls, not the other way around) and (ii) male sexual entitlement (example item: when a boy is sexually excited, a girl should not refuse sex). This pattern was also confirmed when rotating two components for all sites combined. For Dar es Salaam and Mankweng, only the first component had an Eigenvalue higher than 1.00, but forced rotation of two components confirmed a pattern which did not deviate much from the one found for Cape Town. It was therefore decided to construct two sumscores, each covering three items, consistent with the pattern identified. Response categories consisted of a 5-point scale ranging from *completely disagree* to *completely agree*. Paper II includes an overview of psychometric properties of the attitude scales.

2.4.3 Sexual debut

In paper III the focus was on social cognition predictors of sexual debut. *Sexual debut* was assessed by combining (dichotomous) responses of not having had sex at baseline and confirmations of having had sex (vaginal or anal) by the second follow-up (one year later). These measures on sexual experience were taken from the Kahe study in Tanzania (Kugler et al., 2007).

2.4.4 Social cognition scales

Social cognition scales, used in paper III, were made for the SATZ study, and included the following scales: *Negative outcomes expectations* (4 items), sample item “If I do not have sexual intercourse, I will lose some of my friends”; *Social norms* (5 items), sample item “Most of my friends do not plan to have sex until they are older”; *Self-efficacy* (8 items), sample item “I am able to wait until I am 18 years old before I have sexual intercourse”. Response categories consisted of a 5-point scale ranging from *completely disagree* to *completely agree*. We also measured *intentions* to have sex in paper III: “I plan to have sex in the next 6 months”.

In the Theory of Planned Behaviour, attitudes are evaluations of beliefs about the positive and negative outcome consequences of the behaviour (Fishbein & Ajzen, 2010). Our attitude-scale was predominantly about negative outcome expectations, not about positive outcome expectations. Therefore instead of calling the scale ‘attitudes’ we decided to call it the ‘negative outcome expectations’-scale, to better capture the content of the scale.

At the time of the SATZ study (2002-2006), the Theory of Planned Behaviour included only injunctive norms (beliefs about whether important others approve or disapprove of the

behaviour), while in the 2010 update of the model, descriptive norms have also been included (Fishbein & Ajzen, 2010). Descriptive norms are based on beliefs about the behaviour in question being performed by important others. Even though we called the scale ‘social norms scale’ it is important to keep in mind that this scale only consists of items on injunctive norms.

Perceived behaviour control is an evaluation of beliefs about personal and environmental factors that promote or hinder performing the behaviour. Items in our questionnaire were phrased such that they were all about the person’s ability to avoid sex, even in difficult situations, like drunkenness and pressure from partners. There were no items particularly about contextual factors that could prevent from engaging in the behaviour.

2.5 Sociodemographic variables and health behaviour

In addition to the scales above, selected socio-demographic variables were included (varying by paper): sex, age, socioeconomic status (SES), religion, living with father and mother, and father and mother’s education. These data were self-reported by participants. An index for SES was based on three variables: (i) number of assets in the household (television, electricity, bicycle, tap water and car); (ii) number of people sleeping in the same room (natural logarithm of the number — in order to compensate for a right-skewed distribution — and scale reversed) and (iii) a subjective assessment of the material situation of the family (five categories, from scarcity of food to luxury). All three variables were then standardized (z-scores), and a mean score of the three scores was calculated. This score was again standardized (Aarø et al., 2011). Father and mother’s education were originally measured on

a 6 point scale, and were collapsed to a 4 point scale: (less than) Primary education, Secondary education, College/University, Do not know/I have no mother.

2.6 Statistics

The analyses in the first two papers were carried out with SPSS 15.0 (SPSS, 2006). Analyses in paper III were done in SPSS 19.0 (IBM Corp, 2010) and Mplus version 6 (Muthén & Muthén, 1998-2011). All analyses were adjusted for cluster effects. Cluster effects occur when participants are nested in clusters, in our case schools. That means the participants are not selected as a simple random sample. This violates the assumption of independence that is at the heart of common methods of statistical estimation and hypothesis testing (Wears, 2002). This has implications for the statistical analysis of the data, such as too small p-values when doing significance testing, too narrow confidence intervals, too small sample size estimates, and an increased risk of making Type I errors (erroneously declaring something a significant effect) (Thomas & Heck, 2001; Wears, 2002). Cluster effect was taken into account by doing analyses in SPSS Complex Samples, a module that accounts for complex (stratified/clustered) sampling designs and correctly calculates standard errors taking the clusters into account. Similar adjustments for the cluster effect were done also in our Mplus analyses.

Analyses in paper I included prevalences, cross-tabulations and logistic regression models. Specifically, backward stepwise elimination multiple binary logistic regression was done in order to identify a limited set of important predictors. Analyses in paper II included factor analysis, prevalences, cross-tabulations and general linear modelling (GLM). In paper III we did multi-group structural equation modelling, in addition to using descriptive statistics.

2.7 Philosophical and ethical considerations

Ethics are important when conducting a study like the SATZ study. Campbell and Dienemann (2001) propose 6 ethical issues that researchers on violence should take into consideration before, during and after the research process: research paradigm employed, cultural context and community involvement, safety, participation and informed consent, confidentiality, and dissemination. Below we will discuss how these and other issues were handled in the SATZ study.

2.7.1 Philosophical considerations

This study proposes a worldview of critical realism, a movement that came as a reaction to dissatisfaction with positive and postpositive anti-realist worldviews (Gorski, 2013; Patomäki & Wight, 2000). According to critical realism, the world is not only made up of impressions, experiences, events etcetera, but also of underlying structures, powers and properties. Science then is the attempt to identify the structures and powers and tendencies, and to understand their characteristic ways of acting (Patomäki & Wight, 2000). Many of these structures can only indirectly be observed with social scientific instruments and categories, which should continually be reflected on and revised (Gorski, 2013). Within the realm of critical realism, quantitative research methods are used predominantly, as is the case in this study.

2.7.2 Ethical clearance

Ethical clearance for the SATZ study was provided by the Western Norway Regional Committee for Medical Research Ethics, the Research Ethics Committee of the University of Cape Town (South Africa), the Senate Research and Publications Committee of the

Muhimbili University of Health and Allied Sciences in Dar es Salaam (Tanzania) and The Ethics Committee of the Faculty of Health Sciences, University of the North (South Africa). The project was also approved by the Data Protection Officer for Research of the Norwegian Social Science Data Services. See appendices.

2.7.3 Consent and confidentiality issues

Parental consent was sought through a letter that described the study; parents could complete a declination form to prevent the participation of their child in the research. Students signed assent forms for participation in the study. The information leaflet accompanying the consent form outlined the various program topics, and also contained information regarding the possibility of withdrawal from the study at any moment if students no longer felt like participating. During data collection, special procedures were followed to separate identifiers from students' names, and after data collections had finished, all information was deleted that could link back to specific students (i.e. student names, school names). Data were stored in each site initially for computing and cleaning, and also sent to the coordinator's office for further quality control and for safe keeping of master copies. Confidentiality during filling in questionnaires at schools was sometimes challenging with over-crowded school classes and such, but this was done to the best of the schools' and researchers' abilities.

2.7.4 Sensitive topics and safety issues

Topics included in the SATZ study intervention curriculum, dealt with sexual- and reproductive health, body- and self-image, and intimate partner violence, amongst others. These were potentially sensitive topics to receivers of the program, especially regarding their young age. A sensitive topic has been defined by Lee and Renzetti (1990) as: "one which

potentially poses for those involved a substantial threat, the emergence of which renders problematic for the researcher and/or the researched, the collection, holding and/or dissemination of research data” (p. 512). There are a number of areas in which research is more likely to be threatening: research into very personal experiences or in the private sphere, research about deviance and social control, and research that might cause the respondent discomfort talking about it (Lee & Renzetti, 1990).

The focus in this study was on intimate partner violence, which inherently is a sensitive topic to research. It carries the risk of creating emotional distress for both participant and researcher, and can even lead to more violence, for example when the abuser wants to take revenge on researchers or participants for disclosure of the violence. Still, Sieber and Stanley (1988) argue that: “Sensitive research addresses some of society’s most pressing social issues and policy questions. Although ignoring the ethical issues in sensitive research is not a responsible approach to science, shying away from controversial topics, simply because they are controversial, is also an avoidance of responsibility” (p. 55). In researching sensitive topics, the researcher should be ‘culturally sensitive’. This refers to “the understanding and approaches that enable the researcher to gain access to individuals in society, to learn about their lifestyles, and to communicate in ways that the individuals understand, believe, regard as relevant to themselves, and are likely to act upon” (Liebling & Shah, 2001, p. 3). Since the topics that were discussed in the SATZ intervention could potentially be sensitive to the students, the study protocol included distributing leaflets to students with phone numbers of various organizations that could assist with matters of abuse, drugs and alcohol, and physical or mental health problems. This was done so that students would have a place to turn to, both during and after the intervention. Where applicable, students were also reminded of school health services at their school.

2.7.5 Research team

In the SATZ study, teachers (who were to deliver the program) were specifically trained to teach the program curriculum. Field workers were also trained to conduct research activities. Important components of all training were reflection on prejudices and personal attitudes towards all the topics the study focused on. From the SATZ training protocol: “Members of the team should (...) be able to deal with these issues in an open manner also towards views and opinions that diverge from their own”.

2.7.6 Local context and relevance of the research material

Prior to the SATZ intervention, researchers had done an extensive situational analysis, to map local issues regarding youth’s reproductive health. The SATZ study was developed by the African research teams, in cooperation with their European partners. This ensured that local needs were addressed, that were relevant for the target group and their immediate context (schools, parents, local communities). The research material was centrally developed, yet carefully adapted and adjusted to each site in order to ensure its’ relevance to the local settings. Similarly, the research instrument was produced in English, then translated by language professionals to the local language(s) (Afrikaans, Xhosa, Sepedi in South Africa, and Swahili in Tanzania), and subsequently back-translated to English. By comparing the back-translated version with the original version problems with the translations were identified. Solutions were found after extensive discussions among researchers in each of the research teams. The quality of the questionnaires and the relevance of the instrument could in this way be ensured.

3. Results

3.1 Introduction

Throughout the three studies, the focus was on describing the magnitude of, and factors and behaviours associated with intimate partner violence in each of three study sites. In paper I data from both the control and intervention groups were used, since the analyses were based on baseline data only, before the intervention had taken place. In paper II and III the data came from the control arm from the SATZ study only. Analyses of data included those students that reported having been in a romantic relationship, since all the violence variables were about partner violence. Paper I was a baseline cross-sectional study, which focused mostly on the prevalence of IPV and variations in sub-groups in relation to a number of socio-demographic variables. Paper II was a prospective study about the relation between attitudes and perpetration of violence. Paper III, also a prospective study, focused on the role of violence in predicting early sexual debut. In all three studies statistical analyses were carried out with control for cluster effects.

3.2 Paper I

“Dating violence among school students in Tanzania and South Africa: prevalence and socio-demographic variations.”

The first aim of this paper was to describe prevalences of dating violence among young adolescents in Cape Town and Mankweng (South Africa) and Dar es Salaam (Tanzania).

The second aim was to document associations between victimization, perpetration and overlap between these, as well as associations with socio-demographic factors.

Intimate partner violence was measured by using items from the CTS2 (Straus et al., 1996), and a dichotomy for experienced violence was constructed, one for victims and one for perpetrators. Besides cross tabulations, we also did cross-sectional multiple logistic regression analysis with demographic predictors. All analyses were adjusted for cluster effects and were carried out with SPSS version 15.0 (SPSS, 2006).

To answer the first aim of the paper, we found that in our sample, depending on site and gender, victimization prevalences ranged between 10.2-37.8%. Perpetration prevalences ranged between 3.1-21.8%, and victim-perpetrators (those that have experienced violence both as victim and perpetrator) prevalences ranged between 8.6-42.8%. In this study, ‘victims’ mean those that had not been perpetrators as well, ‘perpetrators’ indicate those that had not been victim as well, while ‘victim-perpetrators’ indicate those that have been both victims and perpetrators, although we cannot know in what order.

With regard to the second aim, after controlling for other factors, a higher age and lower socioeconomic status were associated with violence in general. Being male in all sites was associated with perpetration in particular; being female with victimization (except in Cape Town where the converse finding was obtained). Higher parental education in Cape Town was protective against all types of violence. We concluded that violence is prevalent and widespread in the study sites. However, within sites there were no clearly defined and specific subgroups identified as being at high risk, therefore it was recommended that violence control policies and interventions targeting young adolescents should not be limited to high risk groups only.

3.3 Paper II

“Associations between attitudes towards violence and intimate partner violence in South Africa and Tanzania.”

The overall purpose of the second paper was to study the attitude-behaviour association. Examining this relationship is important since the findings may throw light on aspects of violence prevention among adolescents in sub-Saharan Africa. The aim of this paper was to examine the relation between attitudes toward violence and actual violent behaviour among school students in our three study sites, first cross-sectionally, and second with a special focus on prospective prediction of both attitudes and behaviour. This relation was examined separately by site and gender.

Prevalences of violent attitudes were obtained by site, sex, and type of violence involvement. Associations between attitudes and behaviour were analysed with logistic regression and general linear modelling (GLM). All analyses were adjusted for cluster effects and were carried out with SPSS version 15.0 (SPSS, 2006). Factor analysis showed that there were two underlying dimensions among the attitudes: ‘gender role stereotyping’ and ‘male sexual entitlement’. With regard to the first aim, baseline male sexual entitlement attitudes in all sites were more strongly associated with behavioural outcomes than were gender role stereotyping attitudes. This means that *any* experience with violence as victim or perpetrator – as opposed to no such experience – was associated with more acceptance of notions of male sexual entitlement. At the two follow-ups though, the association with behaviour only remained significant for Cape Town. For Cape Town, victim-perpetrators in particular were more likely to report male sexual entitlement attitudes, while student non-involved with violence were the least accepting of male sexual entitlement. Acceptance of male sexual

entitlement declined over time for victim-perpetrators in Cape Town and Mankweng, and for non-involved respondents in Mankweng. Declining trends for other violence groups were found as well, also in Dar es Salaam, however these did not reach statistical significance.

For the second aim, prospective prediction of attitudes and behaviour, we found that for Cape Town (and to some extent Mankweng), the results were consistent with the notion of a bidirectional attitudes–behaviour interrelationship. For Dar es Salaam, attitudes predicted behaviour prospectively; however, prediction in the opposite direction was not confirmed. These results indicated that attitude change strategies may be useful when complementary to structural approaches also in global South settings, although their effectiveness may vary.

3.4 Paper III

“Social cognition variables and victimization as predictors of sexual debut among adolescents in South Africa and Tanzania: a multi-group SEM analysis.”

The first aim of paper III was to examine the importance of the Theory of Planned Behaviour variables in predicting early sexual debut with multi-group structural equation modelling.

The second aim was to examine to what extent exposure to violence (as victim), as well as selected sociodemographic factors, predicted the transition to sexual intercourse. In particular we wanted to examine the predictive power of social cognition predictors when controlling for sociodemographic variables and exposure to intimate partner violence.

Measurements included descriptive statistics for cross-sectional analysis done in IBM SPSS Statistics 19.0 (2010), and multi-group structural equation modelling done in Mplus version 6 (Muthén & Muthén, 1998-2011). Multi-group SEM was used in order to test the model for

prediction of sexual debut by site and gender. There were six groups: a boys group and a girls group for each of the three sites.

With regard to the first aim, two multi-group SEM models were run. Firstly we tested out the basic TPB model, with baseline attitudes, social norms, self-efficacy, intentions, and behaviour (sexual debut during the course of the study). This model showed an acceptable fit (CFI = 0.995, RMSEA = 0.013). The models functioned better for students from Western Cape, in the sense that it explained more of the variance in intentions. Secondly we tested out a model where the same TPB predictors were included, controlled for sociodemographic factors age and socioeconomic status. The predictive value of the model did not change much, with slightly reduced coefficients between the TPB predictors and intentions and behaviour than in the first model. The R-squared values increased in the second model, although not by much.

The second aim of this paper was addressed in the third SEM model, where violence was included, while still controlling for sociodemographic factors. The predictive power of the TPB predictors became slightly lower again, without any major alterations as compared to the previous model. Even in this model intentions predicted sexual debut significantly, but the association was rather weak. Violence did not predict intentions, but violence did predict sexual debut. By introducing violence into this model, explained variance in sexual debut increased substantially. We concluded that focusing on individual-based cognitive factors can be useful for targeting delaying sex among adolescents, although more so in the Western Cape area. However, violence needs to be addressed in such efforts as well, preferably at the larger social and structural level, if long-term community-wide changes are to be realised.

4. Discussion and conclusion

4.1 Introduction

The overall aim of this PhD thesis was to study intimate partner violence in the context of sexual behaviour among adolescents in three sites in sub-Saharan African. More specifically, to study the prevalence of intimate partner violence, variation across subgroups, cross-sectional and prospective associations with attitudes, and the ability to predict sexual debut when competing with demographic and social cognition predictors. The ASE model, which is rather close to the Theory of Planned Behavior, guided the development of scales used in the SATZ project, and this is studied more closely in the third paper of this thesis.

4.2 Main findings

Paper I. Violence was prevalent in all sites: depending on site and gender, 10.2-37.8% has been victim, 3.1-21.8% perpetrators, and 8.6-42.8% has been both victim and perpetrator. Being male was associated with perpetration in all sites, while being female was associated with victimization in Dar es Salaam and Mankweng (yet in Cape Town victimization was also associated with being male). In all sites higher age and low socioeconomic status were associated with all types of violence. In Cape Town, being religious and having parents with higher education were protective against all types of violence. However no clear subgroups were defined as being at much higher risk, so violence control policies should target young adolescents across geographic, economic and social groups.

Paper II. We found that results were consistent with the notion of a bi-directional attitudes-behaviour interrelationship in Cape Town (and to some extent Mankweng). In Dar es Salaam attitudes predicted behaviour prospectively, but prediction in the opposite direction was not confirmed.

Paper III. The results showed that the Theory of Planned Behaviour predictors did not have strong predictive power. Controlling for sociodemographic factors did not change the predictive power much, nor when violence was added to the model. However, violence *did* predict sexual debut directly, and explained variance in sexual debut was substantially higher when violence was added to the model.

4.3 Strengths of the study

The SATZ study was unique in that it was a large scale, multi-site, prospective panel study focused on adolescent sexual and reproductive health in sub-Saharan Africa. At baseline, a large number of 15,864 participants were included, and about 80% of the students also completed the two follow-up data collections. This large number increased the accuracy of estimates and made it possible to study subgroups. Low attrition contributed to reducing selection bias.

Three sites were included in the study, two in South Africa (city of Cape Town, and Mankweng in Limpopo province), and one in Tanzania (city of Dar es Salaam and wider surroundings). Researchers located in the respective sites were involved in the designing and piloting of the study. This contributed to producing culturally relevant and meaningful intervention material and data collection instruments. Although the interventions and

questionnaires were slightly adjusted to the specific sites, efforts were made to make the instruments comparable across sites. We have therefore information from three different sites, allowing for comparison across sites that differ culturally and socially.

This study also fills in a gap of knowledge on intimate partner violence among adolescents from sub-Saharan Africa. Although numerous studies have focused on this type of violence, very few used prospective, longitudinal data designs. Our study lasted about 12 months, with three data collection waves done in the same cohorts, in three geographical and culturally different settings. This allowed for many different types of analysis with selection of cross sectional or longitudinal data, with selection of cohorts or geographical areas, and with different statistical methods.

Additionally, there was adequate control for cluster effects (schools) in the statistical analysis. We did this by running our analysis in the SPSS Complex Samples Module, which accounts for complex (stratified/clustered) sampling designs and correctly calculates standard errors taking the clusters into account. Control for cluster effects was also done with Mplus (in paper III).

4.4 Limitations of the study

4.4.1 Limitations of SATZ intervention study

The intervention part of the SATZ study took place in schools, therefore excluding out-of-school youth. It is possible that this group had a higher exposure to violence, growing up in an environment where parents or guardians fail to put these children through school due to financial constraints or because of other priorities.

There were certain limitations with regard to the administration of the intervention in schools: overcrowded classrooms impeded on the intended delivery of school lessons such that they sometimes were shortened or group work and role play were omitted. There was also a high teacher turnover in some schools, which meant that the teachers who were originally trained for delivery of the intervention moved to other schools, and it was not always possible to train new teachers as thoroughly or to train them at all. This may have influenced the way the remaining part of the intervention was delivered in school classes.

There were also some methodological differences between sites with regard to data collections: in Dar es Salaam the data collection was done in a conventional way with use of pen and paper and silent time for self-reporting; in Mankweng the pen and paper method was also used, but questions were read out aloud to the students one by one in order to make sure that the questions were understood and that students would answer all the questions; in Cape Town hand-held palmtops were used with pre-programmed questionnaire questions, and it was required to answer in order to proceed to the next question.

The study was designed based on the principles of various social cognition models, such as the Theory of Reasoned Action, the Theory of Planned Behaviour, and the Attitude, Social Norms, Self-Efficacy (ASE)-model. These models have shown to produce meaningful results in various African settings for a number of health behaviours (O'Leary et al., 2012; Protogerou et al., 2012). However, there is also resistance against the use of Western models in the 'global south'. One critique is that these models are based on individual cognitions and voluntary choices, which might be less relevant in more collectivistic societies where greater strength is put on social expectations and pressure to comply with these expectations (Campbell, 2003). It has been claimed that such models may be not only ineffective but also

harmful; they put the ‘blame’ on the individual if they do not change their behaviour (Campbell, 2003). Furthermore, provided that social cognition models are of limited relevance in cultures in sub-Saharan Africa, interventions based on social cognition models may also be harmful by hindering the use of more efficient and effective interventions. However, through factors such as subjective norms, social influences *are* taken into account in the TPB and other models. However, their effects on behaviour are mediated by intentions, which still places the supposed control of the behaviour with the individual. And although most social cognition models do include social influence predictors, it is less clear how more distant societal factors and contextual barriers are conceptualized and operationalized.

4.4.2 Limitations of PhD study

The questions on violence in our survey were taken from the Revised Conflict Tactics Scale (CTS2) in order to establish the occurrence of violence in our sample. This scale has been criticised because it merely measures frequency of violence, while ignoring severity of the violence, as well as the context and environment in which the violence takes place (Desai & Saltzman, 2001).

A few of the attitude items in paper II were phrased in such a way that male aggression was presumed, which possibly encouraged identification with the same-sex actor. As with all self-reported data, there is a chance that participants answered questions consistent with what they perceived to be socially desirable answers, or in other ways untruthfully. Therefore there may have been under- and over-reporting of sexual and violent behaviours. Specifically, boys and girls may have reported what they would regard as socially acceptable behaviour for their sex. Still, the longitudinal nature of the study made it possible to follow

students over time, thereby to some extent reducing the chance of bias by checking quality of the data, and cross checking various data collections against each other.

One issue in paper II was that we found slightly different factor structures for the attitude scales between the sites, as we have earlier described in the methods chapter of this thesis. Principle Components Analyses on six attitude items based on the Cape Town data showed that there were two underlying dimensions consisting of three items each. This pattern was also confirmed when rotating two components for all sites combined. For Dar es Salaam and Mankweng, only the first component had an Eigen value higher than 1.00, but forced rotation of two components confirmed a pattern which did not deviate much from the one found for Cape Town. It was therefore decided to construct two sumscores, each covering three items, consistent with the pattern identified. This was also done in order to increase comparability of analyses between sites: if the attitude scales would have been different for some of the sites, it would have been impossible to make valid comparisons.

Another limitation of this study is the insufficient operationalization of the TPB variables attitudes, perceived norms and perceived behavioural control in paper III. Only partially did these variables comply with the principle of compatibility: that the action, target, context and time elements should be compatible with the behaviour under investigation (Fishbein & Ajzen, 2010). In addition, the intention variable in this study was not fully compatible with the behaviour, since the item specified a time frame of maximum 6 months into the future, while the follow-up data were not always collected at 6 months after baseline, but often 7 months or more. Our results showed only weak associations between intention and behaviour, both when we ran models with and without violence. Since there was such a large gap of 12-15 months (depending on site) between the measurement of intention (baseline)

and sexual debut (second follow-up), this likely influenced the association. Intentions may change substantially during a whole year, particularly among adolescents in their early teens. In order to obtain stronger prediction, the time interval between two subsequent data collections should have been substantially shorter, for instance one month, as in the study by Protogerou and associates (2013).

The items on attitudes (behavioural beliefs) were phrased such that it might have stolen some predictive power away from social norms, which did not reach significance in our analyses. Also, the behavioural beliefs that were measured dealt with negative social outcome expectancies only. A wider selection on behavioural beliefs should have been included. Since a secondary dataset was used for this PhD study, it was not possible to add items to the questionnaire, because the data was already collected before this study commenced. This is a shortcoming when using secondary datasets, and we have dealt with it in the best way possible by using the relevant items available to us and by making careful conclusions about our results, keeping in mind the limitations of the data.

Social cognition models have also been criticised for being impossible to test, since there are no well-defined criteria with which the theory can be rejected (Ogden, 2003). In addition, when self-reports are used for data collection, they could create and change cognitions and behaviour rather than simply describe them (Ogden, 2003).

As for all self-reported data there is always a chance of socially desirable answers from respondents. To test this, the author of the CTS-2 published a study where a Social Desirability scale was added to the general set of questions on violence, to test the impact of social desirability bias on the validity of the results (Straus, 2004). The study used the Social

Desirability scale of the Personal and Relationships Profile (Straus, Hamby, Boney-McCoy, & Sugarman, 1999), a 13-item scale adapted from the Reynolds short form of the Marlowe-Crowne Social Desirability scale (Reynolds, 1982). These items pertain to behaviours that are undesirable but true of almost everyone, such as “I have never deliberately said something that hurt someone’s feelings”. If a respondent is more likely to score high on the scale, they might be likely to score low on questions about undesirable behaviour (Straus, 2004). Results showed indeed that higher scores on the Social Desirability scale indicated lower scores on the violence perpetration items. Correlations were low however, -0.09 (Physical assault scale) and -0.17 (Injury scale). The authors regarded this a low threat to validity of the scale, but they did control for the Social Desirability scores in their analyses of the violence items (Straus, 2004).

4.5 Discussion of the results

Main themes throughout the three papers:

This study aimed to contribute to the knowledge of intimate partner violence among young people in Tanzania and South Africa. Much research has been done among adult married or co-habiting couples, while much less is known about adolescents of school age. More knowledge about the occurrence of violence, and about particular risk factors and risk groups can be helpful in designing more effective efforts to prevent violence. This is particularly important in the light of the HIV epidemic that is occurring in sub-Saharan Africa. Intimate partner violence can directly (for example infection through unwanted sexual intercourse) or indirectly (for example when poorer girls seek sexual relations with older men for financial support) lead to an increased risk of HIV transmission.

Prevalence of violence

A number of studies have reported on prevalence of intimate partner violence in sub-Saharan Africa. However, such studies often pertain to older students or adults, and are often cross-sectional, lacking prospective data to show prevalences over a longer time. At baseline, results in Paper I indicated that 10-38% of the participants had been victim, 3-22% perpetrator, and 9-43% both victim and perpetrator (prevalences depending on site and gender). These numbers are in line with the findings of the Youth Risk Behaviour Survey that was held in 2002 in South Africa (Reddy, 2003). The prospective study in paper III showed that by the end of the study 22-35% of participants had been victims of partner violence. The actual percentage is likely to be somewhat higher, since those who were sexually active were excluded from the analysis for the purpose of paper III, while that was not the case in the first paper. Those students who were sexually active, especially at a young age, were possibly more at risk of experiencing violence. The percentages are in line with studies from South Africa among youths 13-26 years old, where 23-40% of the samples reported victimization (Jewkes et al., 2010; Swart et al., 2002).

Across data collections, the prevalences in the control group remained rather stable for victims and perpetrators if we look at the uncleaned data (see table 2). However, there were a lot of inconsistencies in the data, for example with respondents who reported to 'ever have been a victim of violence' at baseline, and later reported they had not been a victim at the next data collection(s). The level of inconsistencies was between 40-55% between each pair of data collections (T1-T2 and T2-T3 and T1-T3). In Western Cape the prevalences remained rather stable across the three data collections. However, in Mankweng and Dar es Salaam higher numbers of perpetration (boys) and victimization (girls – although also boys in Dar es Salaam) were reported at baseline, while much lower numbers were reported at the

two follow-ups. We have to be careful with concluding too strongly on the basis of these numbers. It is likely students did not yet have a firm understanding of what physical, sexual, and emotional violence meant, and perhaps their perceptions changed over time. What was thought to be violent at time 1 might not have been regarded as violent at time 2.

Table 2: Victims and perpetrators (%) by site and gender, per data collection (selected for relationship experience, combined control and intervention groups). Extra data, not previously published. (T1 = baseline, T2 = first follow-up, T3 = second follow-up)

	Cape Town		Mankweng		Dar es Salaam	
	Boys (n=2143)	Girls (n=1963)	Boys (n=1828)	Girls (n=1181)	Boys (n=689)	Girls (n=277)
Victim						
T1	14,0	11,7	7,4	18,8	19,0	24,5
T2	12,4	10,4	7,0	12,2	14,6	17,9
T3	12,7	10,0	6,7	8,5	11,6	19,2
Perpetrator						
T1	7,2	5,3	11,7	2,4	10,6	2,9
T2	7,5	6,3	9,2	3,0	8,5	1,9
T3	7,8	7,5	5,5	4,6	5,3	1,5
Total						
T1	21,2	17,0	19,1	21,2	29,6	27,4
T2	19,9	16,7	16,2	15,2	23,1	19,8
T3	20,5	17,5	12,2	13,1	16,9	20,7

Still, in our study setting in sub-Saharan Africa there might be cultural beliefs influencing responses as well. There might be conflicting ideologies, whereas on the one hand it would be socially undesirable to admit to perpetrating violence against a partner, but at the same time cultural beliefs such as ‘if a man really loves a women, he will hit her’ promote or condone violence. The adolescents in our study will have been influenced by all these beliefs, and there is no certain way we can know what responses were true and which were not. We needed to clean our inconsistent data though, and have cleaned data such that for victimization and perpetration separately, inconsistent violence responses were cleaned based on responses at later data collections. This meant that we put more trust in responses at later data collections than at preceding ones, on the assumption that adolescents had become

older and more knowledgeable about violence, and also were more skilled in filling out questionnaires.

It is important that violence prevention efforts target young people before and around the age that they start having romantic and sexual relationships. The prevalences for violence found in this study are high, but in the future prevalences for this sample could even be higher. Adult women in abusive relationships have often been abused early in their life, and are more likely to go through a series of abusive relationships (Stöckl et al., 2014). In addition to negative mental, physical and reproductive health outcomes, it also increases their chances of HIV infection through various pathways (Maman, Campbell, Sweat, & Gielen, 2000).

Factors associated with violence

While it is clear that intimate partner violence among young people is widespread and in need of urgent attention, it may not be immediately clear what action should be taken. Historically, much focus has been on the male as perpetrator and the female as victim, pushed by a feminist agenda. In later decades violence became a political and human rights issue. Nowadays it is recognised that violence against an intimate partner is complex, and multidimensional, comprising factors at the personal, situational and sociocultural level (Heise, 1998). While structural measures are necessary, they need to go together with approaches aimed at the community and individual level. Intimate partner violence is a complex problem and this study aimed to throw light on the individual level, and to inform future interventions on the factors that might be most useful to use in that regard.

Paper I showed associations between higher age, lower socioeconomic status and occurrence of violence in all sites. As people become older, they also become more involved in romantic

relationships, possibly of a violent nature. Growing up in surroundings that are marked by violence means that over time one is more exposed to general violence in the community, perhaps somehow affecting relationships as well. If for example, the general tendency of handling conflict is through aggression and violence, this is likely to affect conflict resolution in romantic relationships as well.

The association of violence with socioeconomic status may mean that in less affluent families and communities, the stress related to lack of resources increases the likelihood of violence. In addition, poorer families are likely to have achieved lower levels of education, and may therefore have fewer resources and skills for handling conflict. With regard to parents' level of education, there was an interesting pattern: whereas in Cape Town a lower level of parental education was associated with violence, in Dar es Salaam (for victims) and Mankweng (for perpetrators), having a mother with a university degree also tended to be associated with violence. This is consistent with a study from South Africa (Jewkes et al., 2006), where a higher maternal education increased the likelihood of perpetrating rape. A higher parental education can be linked to a position of power and economic resources, possibly creating pathways to violence. Religion tended to be a protective factor against violence in Cape Town and Mankweng, which is consistent with other studies (Ellison, Trinitapoli, Anderson, & Johnson, 2007; Herrenkohl et al., 2003). Belonging to a religion might mean growing up in more controlled surroundings, where norms and values about (sexual) relationships are internalised that influence behaviour.

Paper I showed that males most often were the perpetrators of violence against a partner, but also the reverse was found for Cape Town males: they reported more often being victims of violence by their girlfriends. This has also been found in other studies from South Africa

(Flisher, Myer, Merais, Lombard, & Reddy, 2007; Swart et al., 2002), and could reflect high numbers of abused males. At the same time it could also reflect social notions of violence, whereby girls are less likely to report violence inflicted on them by boyfriends because this type of violence is regarded an expression of love (Wekerle & Wolfe, 1999). In addition it is often believed that girls' violence is in reality self-defence against violence from a partner (Hird, 2000). However, these explanations do not do justice to males who are physically abused, and we should therefore be careful to draw too strong conclusions from these data. It would require more research that examines details about abuse, in order to find out about order of violent events, about level of abuse, and generally about gender dynamics in use of violence.

Attitudes and attitude approaches to behaviour change

At the individual level, many behavioural interventions utilise attitude change approaches to address violence, which is based on the assumption that changes in beliefs and attitudes will lead to a change in behavioural practices (Avery-Leaf et al., 1997; Foshee et al., 2004; Macgowan, 1997; Pacifici et al., 2001). Cross-sectional studies have shown evidence for the relations between attitudes, intentions and behaviour. For example, a study from South Africa found that cross-sectionally, positive attitudes about partner violence were associated with violence intentions, $\beta = .523$ ($p = .004$), and with violent behaviour, $\beta = .641$ ($p < .001$) (Flisher et al., 2007). Robertson and Murachver (2009) did a qualitative study of violent attitudes in New Zealand; they found that both victims and perpetrators were more likely to have attitudes condoning of IPV. A longitudinal HIV prevention programme from Africa targeting among others violence attitudes (Stepping Stones) (Jewkes et al., 2008), found downward trends on young males' (15-16 years old) violent behaviour after 12 and 24 months, however these findings only borderline significant. A prospective study among

adolescent males in the USA showed that positive attitudes towards violence predicted increased violence against women (odds ratio 1.9, $p = .0001$) (Lanier, 2001). Although a lot of research has been done on the relation between violent attitudes and behaviour, still in the developing world there has not been much *prospective* research into this relation, especially not among young people. The present study focuses on exactly these topics and therefore contributes to the knowledge intimate partner violence in relationships of young people.

This longitudinal study shows some mixed results into the question whether attitudes predict behaviour. Firstly, in paper II, the cross sectional data at baseline showed that attitudes and behaviour were related: youths who were neither victims nor perpetrators had the least supportive attitudes of a man's (violent) entitlement to sex, while victims and perpetrators had more supportive attitudes, and participants who had been both a victim and perpetrator had even higher supportive attitudes. We concluded that more involvement with violence meant more accepting views of justified violence. This relates to attitudes being a product of a normative context. In communities where violence is more common, social norms are likely to be accepting of violence, and the same is probably true for individual attitudes. Perpetrators' attitudes might reflect (or justify) their violent behaviours, in line with for example Bem's theory (Bem, 1967). For victims this is somewhat more difficult to imagine, as one would expect victims of violence to be non-accepting of violence. According to the Constructivist Self Development Theory children that are abused might be affected by 'cognitive disruptions' in 'self' and 'other' schemas (McCann & Pearlman, 1990), leading them to accept violence as normative in adult relationships. According to this theory there are five basic psychological needs or schematic structures that can be disrupted by childhood abuse: safety, trust, esteem, control, and intimacy (McCann & Pearlman, 1992). Ponce and colleagues (2004) tested the theory among 433 undergraduate students in the US and found

that students who reported maltreatment in childhood indeed were more likely to display distortions in their cognitive schemas, and also more likely to accept relationship violence. Especially with the loss of control and helplessness that victims experience, it is more likely that violence-accepting attitudes are adopted, so as to avoid internal conflict (White & Smith, 2001). When violence is perpetuated over a longer time, victims might also suffer from 'Stockholm syndrome' where there is a power imbalance between victims and perpetrators on which grounds false emotional bonds are created, and where victims identify with the perpetrator (Adorjan, Christensen, Kelly, & Pawluch, 2012).

Second, the prospective data on the attitude-behaviour relationship in paper II showed that in all three sites attitudes predicted behaviour in the first 6-months interval (after control for behaviour at baseline), consistent with for example Allport (1935) and Fishbein and Ajzen (2010) (although according to Fishbein and Ajzen behavioural intentions mediate the relationship). For the second 6-months interval this attitude-behaviour relation was confirmed only for Western Cape, while the relation was borderline significant for Dar es Salaam, but not significant for Mankweng. Perhaps this was due to the fact that attitudes remained relatively stable over time in Western Cape and Dar es Salaam, while in Mankweng there was a tendency for attitudes to become less supportive of sexual entitlement over time. The sample in Western Cape was also slightly older, so possibly their attitudes were more established. Younger participants could have exaggerated their opinions at first, becoming less extreme over time. On the other hand, with age, they could have become more aware of social desirable opinions. One issue to keep in mind is gender bias in phrasing of the items. The attitude items were phrased such that males were assumed to exert pressure, and females to be more passive. This could have led to respondents identifying with the same-sex actor in the items (Edelen, McCaffrey, Marshall, & Jaycox, 2009).

Thirdly, in Western Cape (and to a lesser extent Mankweng), behaviour also predicted attitudes. This is in line with Bem (1967) who maintained that attitudes may reflect or justify behaviour. Associations in both directions are consistent with the idea that there is bidirectional causality: behaviour influences attitudes and attitudes influence behaviour (Festinger, 1957). The differences in causality of attitudes and behaviour between the sites might indicate that different contexts require specific kinds of interventions. Perhaps these differences can be attributed to local culture: the Western Cape with its' capital Cape Town is a more urban, Westernised environment, where attitudes might be more individually constructed and more consolidated than in the other sites (Markus & Kitayama, 1991). The role of contextual influences may be more important in Dar es Salaam and Mankweng, respectively a more classic collectivistic society and a rural town with a rather traditional cultural orientation.

Social cognition models

Paper III focused on factors assumed to predict behaviour, in the context of the Theory of Planned Behaviour by Fishbein and Ajzen (2010). We were particularly interested in the role of violence as a predictor of sexual debut. Early sexual debut is very common in South Africa and Tanzania, where about half of young people are sexually active by age 16 (Eaton et al., 2003; Munguti et al., 1997). Early sexual debut is associated with violence; the younger a person is at first intercourse, the more likely it is that force is involved (Watts & Zimmerman, 2002). Early sexual debut can also lead to reproductive health problems such as unwanted pregnancy, inconsistent condom use, HIV transmission, and a subsequent high number of sexual partners (Pettifor et al., 2004).

The results showed a high one year incidence of sexual debut: for girls 12-23%, and for boys 22-32%, depending on the site. Added together with the adolescents who at baseline were removed from the study because of self-reported sexual activeness, it means that a quarter to half of our sample were sexually active by age 15-16, which is consistent with other studies (Munguti et al., 1997; Pettifor et al., 2005). A large proportion of those who had their sexual debut during the course of the study also became victims during the study, although it is impossible to know whether these events took place concurrently. However, we know from the literature that a large proportion of women in South Africa and Tanzania (40% resp. 28%) report their first sexual intercourse to have been forced (Watts & Zimmerman, 2002), and it is therefore not unthinkable that forced sexual debut might have taken place in our sample.

The first model in paper III included the basic TPB predictors, and the model functioned reasonably well in all sites with regard to prediction of intentions (the prediction of sexual debut was rather weak), although slightly better for Cape Town, where more variance was explained. When we introduced firstly sociodemographic variables, and secondly, violence into the model, it did not change the regression coefficients much. Adding violence increased the explained variance substantially though. Sexual debut was also directly predicted by violence. Attitudes predicted intentions in all sites, and, to a lesser extent, intentions predicted sexual debut. This suggests that social cognition variables only to a small extent can explain sexual debut, and that other external factors are likely to be important. Social and cultural conditions can make violence more likely to occur, such as a cultural acceptance of violence, patriarchy, an under-performing educational system, and deficient judicial action against violence (Jasinski, 2001). In addition, the applicability of

such models as the TPB model, in other settings than where they have been developed, should be looked at critically, as discussed previously in this chapter.

When comparing results on attitude-behaviour associations of the three papers in this study, we need to keep in mind that the findings in paper II deals with different behaviours and different attitude scales than those in paper III. In paper II support was found for prospective prediction of behaviour (perpetration) by attitudes (towards violence) in all three sites, and also evidence for bidirectional attitude-behaviour associations in Cape Town (and to a lesser extent Mankweng). On the other hand, in paper III support was found for prediction of intentions (to have sex) by attitudes (towards delayed sex), but not for prediction of behaviour (sexual debut) by intentions. Although the outcome behaviours were different in these two papers, there are also commonalities between these behaviours: both intimate partner violence and sexual intercourse are interpersonal, usually involving two people. Violence and sex are also both behaviours that usually take place in private settings, at home, or otherwise away from the public eye. In addition, early sexual debut and perpetrating violence are both behaviours that are usually not socially approved of. Yet, the behaviours are also different in that sexual intercourse is generally viewed as something positive (under the right circumstances, for example between consenting adults), whereas this is not the case for violence, which generally will be viewed as harmful and negative.

4.6 Recommendations

This study shows that intimate partner violence is highly prevalent already at a young age in relationships between young people in South Africa and Tanzania. This demands attention in order to prevent young people from ending up in circumstances that are dangerous to their safety, and detrimental for their mental and physical health. To some extent this study found

support for including individual attitude- and behaviour change approaches in intervention efforts: in paper II we found that in Cape Town (and to some extent Mankweng) there was a bidirectional relationship between attitudes and behaviour (attitudes towards violence and being a perpetrator), and in Dar es Salaam attitudes predicted behaviour prospectively. In paper III support was found with regard to prediction of intentions by attitudes (and to some extent behaviour by intentions). Still, the social cognition model could only explain a limited amount of explained variance, and there is therefore a need to look into other environmental influences on individual's behaviours. We emphasize the need to address violence in the wider community at the larger social and structural level beyond the individual level.

Recommendations for future research and interventions comprise furthermore including both sexes, since both are part of the dynamic that keeps violence going, and targeting young people, preferably before they become involved in (sexual) relationships. Interventions should be adjusted to the cultural and social settings where they take place, and should take an ecological outlook where the individual is targeted, as well as their surroundings at the interpersonal, community, and structural level.

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