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Predictors of Parent-Adolescent Communication in Post-apartheid South Africa: A Protective Factor in Adolescent Sexual and Reproductive Health

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Abstract

In the HIV context, risky sexual behaviours can be reduced through effective parent-adolescent communication. This study used the Parent Adolescent Communication Scale to determine parent-adolescent communication by ethnicity and identify predictors of high parent-adolescent communication amongst South African adolescents post-apartheid. A cross-sectional interviewer-administered survey was administered to 822 adolescents from Johannesburg, South Africa. Backward stepwise multivariate regressions were performed. The sample was predominantly Black African (62%, n=506) and female (57%, n=469). Of the participants, 57% (n=471) reported high parent-adolescent communication. Multivariate regression showed that gender was a significant predictor of high parent-adolescent communication (Black African OR:1.47, CI: 1.0-2.17, Indian OR:2.67, CI:1.05-6.77, White OR:2.96, CI:1.21-7.18). Female-headed households were predictors of high parent-adolescent communication amongst Black Africans (OR:1.49, CI: 1.01-2.20), but of low parent-adolescent communication amongst Whites (OR:0.36, CI: 0.15-0.89). Overall levels of parent-adolescent communication in South Africa are low. HIV prevention programmes for South African adolescents should include information and skills regarding effective parent-adolescent communication.

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Keywords

parent-adolescent communication; post-Apartheid South Africa; ethnicity; adolescence; survey

Introduction

Adolescent Risk in South Africa

South Africa is one of the countries with the highest prevalence of sexually transmitted infections (STIs) in the world (Boily et al., 2009) – 5.6 million people are living with HIV/AIDS (UNAIDS, 2011). New infections in the region are largely driven by those aged 15 to 24, who are estimated to account for 50% of the total HIV-infected population (United Nations Programme on HIV/AIDS (UNAIDS) & World Health Organization (WHO), 2009). Interventions have been scaled up and there has been a decrease in the number of new infections among this age group (Shisana et al., 2009), but adolescents continue to engage in risky sexual behaviours (Shisana et al., 2009). Such behaviours include an early sexual debut (Peltzer, 2010; Shisana et al., 2009), drug and alcohol use (Peltzer, 2010; Shisana et al., 2009), inconsistent condom usage (Pettifor, Measham, Rees, & Padian, 2004), multiple sexual partners (Dietrich et al., 2011; Shisana et al., 2009) and intergenerational sex (Shisana et al., 2009). Such behaviours result in unplanned pregnancies, and the transmission of STIs and/or HIV/AIDS (Martino, Elliott, Corona, Kanouse, & Schuster, 2008; Shisana et al., 2009). Parents can play an important role in reducing adolescent risk behaviours while promoting healthy sexual development (Martino et al., 2008). One way in which this outcome can be achieved is through parent-adolescent communication.

Parent Adolescent Communication: the global picture

Parent-adolescent communication is a process through which beliefs, attitudes, values, expectations and knowledge are conveyed between parents and adolescents (Jerman & Constantine, 2010). Parents typically have an opportunity to communicate with their children daily, so they are considered a critical formative role player in their children's development (Jerman & Constantine, 2010). The international literature highlights such communication as a protective factor in adolescent sexual and reproductive health (Bastien, Kajula, & Muhwezi, 2011).

Research has shown that where there is effective parent communication regarding sexuality, sexual debuts are often delayed, sexual negotiation skills improve, and there is increased knowledge, improved interpersonal communication and enhanced self-efficacy (DiClemente et al., 2001; Wight, Williamson, & Henderson, 2006). However, findings are inconsistent. Some studies found no association between parent-adolescent communication and adolescent behaviours, attitudes and knowledge (DiIorio, Pluhar, & Belcher, 2003; Terri D. Fisher, 1988; T. D. Fisher, 1989). Furthermore, Amoran, Onadeko, & Adeniyi (2005) found in a cross-sectional study in Nigeria that earlier discussions regarding sex were reported to encourage early sexual debut. While Miller, Levin, Whiteaker and Xu (1998) found that communication about sex prior to sexual debut promoted condom usage amongst adolescents.

Such evidence is further supported by longitudinal studies which advocate for parent adolescent communication. Jaccard, Dodge and Dittus (2003) highlighted the impact of maternal communication about the consequences of pregnancy upon inner-city African American female adolescents. This was further echoed by the work of Romo, Lefkowitz, Sigman and Au (2002) which showed that improved maternal communication influences Latino adolescent behaviors and attitudes towards sex. Both Cohen, Richardson and LaBree (1994), and Jordan and Lewis (2005) found that good general communication delayed the onset of alcohol use (a mitigating factor in sexual risk), while Getz and Bray (2005) found no association. In a systematic review of literature, Ryan, Jorm & Lubman (2010) suggest that good communication has a positive effect on risky behaviour.

Further to this, the literature highlights a range of socio-demographic characteristics, including socio-economic status (SES), school attendance, parents' level of education, religious affiliation and other household characteristics such as family size, the parents' age and marital status, and parent-adolescent genders (Bastien et al., 2011; Davis & Friel, 2001; Jerman & Constantine, 2010; Miller, 1999) as important factors in the effectiveness of parent-adolescent communication. Race has also been highlighted as a factor in parent-adolescent communication (Coreil, 1983). Furthermore, extensive research on interpersonal communication highlights the impact of depression and low self-esteem, both of which can negatively impact upon interactions (Segrin, 1996). A study by Yu, Clemens, Yang, et al (2006) highlights the potential negative impact of these in parent adolescent communication and risk taking behaviours. While Birndorf, Ryan, Auinger, and Aten, (2005) show the protective factors which positive family communication has upon high self-esteem.

Parent Adolescent Communication: sub Saharan Africa

Historically, the taboo nature of discussions on matters relating to sexuality is well documented across sub-Saharan Africa (Amuyunzu-Nyamongo, Biddlecom, Ouedraogo, & Woog, 2005; Paruk, 2005). Direct parent involvement in sexual socialisation is frequently minimal and authoritarian, with extended family members such as grandparents or aunts playing a key role in communicating sexual knowledge (Bastien et al., 2011; Jerman & Constantine, 2010). These factors are further compounded by the migratory nature of the South African labour force (Coovadia, Jewkes, Barron, Sanders, & McIntyre, 2009), which results in absent parents – in particular fathers, and in children being raised by extended family members. A Department of Health survey (2003) has shown that as many as 40% of Black households are female-headed, with no cohabiting man. In addition, pervasive gender inequalities across the African continent see many mothers ill-equipped to promote positive and constructive sexual development in their children (Lesch & Kruger, 2005). The combination of poor sexual communication and the high incidence of HIV makes parent-adolescent communication a focus for evidence-based programmes.

Parent Adolescent Communication: South Africa

Recently, there has been a move to improve parent-adolescent communication in South Africa. Bhana et al., (2004), Paruk, Petersen, and Bhana (2009) and Phetla et al. (2008) found that the implementation of a parent adolescent communication intervention has positive implications for assertive parenting. For example, Bhana et al (2004) found that

through targeted parental interventions, they could affect a more assertive parenting style over passive, aggressive or manipulative styles. Paruk, Peterson and Bhana (2009) suggest that in a pre-intervention exploratory study to improve parental communication, women's level of social capital was increased as well as their sense of empowerment as parents. Finally, Bogart, et al, (2013) suggest that through a worksite-based parenting program parents level of comfort to engage in sexual communication with their adolescents was significantly increased.

Such programmes appear to provide largely for the needs of parents, and much of the international literature overlooks the complex social dynamics present in the South African context, such as violence. In the international literature, race has been acknowledged to be a factor in parent-adolescent communication, but in South Africa the impact of race on parent adolescent communication remains largely unexplored.

In South Africa, there are multiple youth-centred programmes such as Love Life and Soul City (LoveLife, 2012; Shisana et al., 2009; Soul City, 2012). Such projects are geared to address teenage pregnancy and to reduce new HIV infections through knowledge sharing efforts (LoveLife, 2012). In addition, the South African schooling system addresses these concerns by including life orientation skills in the curriculum (Department of Education, 2002, 2008; Shisana et al., 2009). However, even though such programmes run over multiple years, the rate of new HIV infection for this age group has not decreased consistently between 2002 and 2008, nor did the rate of new infection among African females aged 20 to 34 or African males aged 25 to 49 decrease (Shisana et al. 2009). More evidence is needed on the factors that predict parent-adolescent communication in the South African context in the light of their potential impact on adolescent sexual knowledge and behaviours. A greater understanding of these factors would assist in the inclusion of better ways to address social-level influences in HIV/AIDS prevention programmes (Bastien et al., 2011) geared to the local context. Furthermore and within the context of South Africa's socio-political history, evidence is required to understand whether race impacts upon such communication.

The Potential Importance of Racial Ethnicity

South Africa's political and socio-economic history has left its society structured according to race and gender hierarchies. The country's history of colonial and apartheid rule allowed few economic opportunities for women, and with racial segregation limited resource allocation. Racial discrimination has left a legacy of social and economic disparities, disparity with the Black, Coloured and Indian communities remaining educationally, fiscally and socially disadvantaged (Coovadia et al., 2009). The term Coloured is used to represent a person of mixed racial heritage and is not considered to imply a negative connotation. Race has remained central to South Africa's transformation (Stevens, 2003) and is a term still used to describe groupings of ethnically unique communities, and is currently still used as a designator in empowerment programmes designed to redress the inequities of the past against designated previously disadvantages groups. Thus, for example, in South Africa, the term Black could denote anyone of Zulu, Xhosa, Sesotho, North Sotho, Tswana, Venda, Swazi, Tsonga, Ndebele or Shangaan origin

(or a Black person who has immigrated from another African country), the term, White has come to represent anyone of European descent, and the term Indian someone of some form of Indian descent. Despite modern South Africa's multiracial democracy, the legacy of apartheid continues to challenge transformation and the promotion of equality (Coovadia et al., 2009). Such disparities maintain the status quo and have an impact on health outcomes. Hence, parent-adolescent communication in post-apartheid South Africa is a critical factor requiring attention to ensure that innovative solutions are found to improving communication.

This study attempts to understand demographic and psychosocial factors affecting parent-adolescent communication within an ethnically diverse population. We hypothesized that parent-adolescent communication differs by ethnicity and identified predictors of high parent-adolescent communication amongst South African youth in the post-apartheid era (the period after 1994).

Methodology

Participants

The sample consisted of 822 adolescents aged 16 to 18 years and young adults from Johannesburg, South Africa, matched for lower socio-economic status based on historical and current evidence (City of Johannesburg, 2011; Statistics South Africa, 2001). A total of 506 Black adolescents (62%) from Soweto, 106 Indian adolescents (12%) from Lenasia, 103 White adolescents (13%) from Auckland Park and surrounding areas, and 107 Coloured (of mixed-heritage) adolescents (13%) from Eldorado Park were included in the sample. There were 353 male and 469 female participants.

Study setting

Setting: The areas included are predominantly poorresourced, urban and peri-urban settings with limited employment opportunities. Households frequently rely on remittances from state pensions, child-care grants, manual and commercial labour. The majority of residents have piped water and electricity, however the quality of housing may be very poor. A legacy of racial discrimination, wealth inequalities and gender disparities mean that extended families are often housed under one roof, with a high incidence of single mothers among the Black and Coloured communities.

Procedures

Participant recruitment—After obtaining International Review Board (IRB) approval from the University of the Witwatersrand, Johannesburg, South Africa, and from Duke University, Durham, North Carolina, United States of America, a stratified sample of Black adolescents was selected from Soweto from October 2008 to March 2009. Each of Soweto's 40 townships/areas was considered a stratum. A set of 15 adolescents was purposively selected per stratum. We oversampled adolescent girls, with the number of participants divided into a 60:40 split (9 girls:5 boys), because women are disproportionately affected by HIV in South Africa. Convenience sampling was employed in each stratum, and for the other racial/ethnic groups recruited. Approximately 852 potential Black participants were

approached in Soweto; of these, 152 (18%) were not interested in participating, and 193 of those who were interested (23%) did not arrive at appointments or gave incorrect telephone numbers. One participant's data were removed from the analysis because extensive data were missing. Among the White sample recruited from Auckland Park, 118 were approached; five refused and 10 did not arrive for appointments or gave incorrect telephone numbers. For the Indian sample from Lenasia, 111 were approached; none refused, and only five did not arrive for appointments or gave incorrect telephone numbers. Recruitment breakdowns for the Coloured participants from Eldorado Park were not recorded.

Field workers approached all the potential participants at schools, malls, youth organizations, and shops. Interested participants' telephone numbers were recorded. Interviewers contacted participants via telephone to confirm their interest and arrange a time to complete the questionnaire. Interviews were conducted in English; however, the field workers were fluent in the relevant local language for each participant (in this region, Afrikaans, Shangaan, Sesotho, Tshivenda, and isiZulu), in case further elaboration on questionnaires was needed. A participant's age was verified via his/her identity document or birth certificate. Written consent was required for participation in the study, and for participants under the age of 18 years parental consent was required along with the adolescent's own assent. Parent consent forms were given to adolescents to take to their parents to sign. Parents were approached for consent at their homes if recruitment was conducted close to where the adolescent resided. Parents who required additional information were contacted by telephone or visited in person. Upon obtaining appropriate consent/assent, participants completed a 90-minute interviewer-administered questionnaire. Interviews were conducted at a private venue, either a designated location at the participant's home or at the Perinatal HIV Research Unit (PHRU). This research unit is affiliated with the University of the Witwatersrand and is situated at the Chris Hani Baragwanath Hospital in Soweto, Johannesburg, South Africa. Participants were reimbursed at a fixed rate of ZAR50 (\$7).

Measures

Socio-demographic information—Participants were asked to report their gender, age, ethnicity (racial), schooling history, household composition (i.e. the number of people living in the house, head of the household), their parent/guardian's education level, employment, and marital status. As a gauge of socio-economic status in low resource settings, participants were asked about household structure, including the number of rooms in the house. A crowding index was developed as an indication of overcrowding. This was done by dividing the number of people in the house by the number of rooms in the house. Participants were also asked their sexual orientation ("I consider myself to be heterosexual/straight, homosexual/gay, bisexual or undecided/don't know"). These data were combined into heterosexual vs. lesbian, gay, bisexual (LGB).

Parent-adolescent communication

Scale: A 5-item Parent-Adolescent Communication scale as developed by (DiClemente et al., 2001) was used. Questions included the question "in the past 6 months how often have you and your parents/guardian talked about the following: sex, how to use condoms, HIV/

AIDS?” The five items were scored on a 4-point Likert Scale ranging from 1 (never) to 4 (often), giving an overall parent adolescent communication score ($\alpha=0.82$). A median of 11 was used as the cut-off for scores indicating high parent-adolescent communication.

In addition, questions on circumcision and puberty were included because they are considered appropriate to the South African context. These items were scored as single items on a 4-point Likert Scale ranging from 1 (never) to 4 (often).

Quality of communication: Two additional single-item questions regarding parent-adolescent communication were included: “Who would you say generally initiates or starts conversations about the above topic?” and “How helpful were these conversations?” Scores for single items ranged from 1 (not at all) to 3 (a great deal).

Parent/guardian support—The first eight items from the Parent Social Support for Adolescents (PSSA) Scale (Sneed, Morisky, Rotheram-borus, Ebin, & Malotte, 2001) were adapted for the South African context by including a grandparent/guardian. Items included “My mother/father/grandparent/guardian understands when I tell him/her things” and “My mother/father/grandparent/guardian makes me feel good about myself”. A 4-point Likert Scale was used, ranging from 1 (strongly disagree) to 4 (strongly agree) ($\alpha=0.85$). Items were totalled by the category of mother/father/grandparent/guardian, giving a weighted total by category. Eventually, grandparent and guardian were removed from the analysis due to missing data.

Depression—The Children’s Depression Inventory (CDI) was used to assess depressive symptoms in the past two weeks (e.g., depressed mood, anhedonia, neurovegetative functions, self-evaluation, and interpersonal behaviours). The scale consists of 27 items, some reverse-scored. Items are totalled, and with scores over >19 being associated with Clinical Depression (Kovacs, 1992). Each of the 27 items was scored from 0 to 2 and summed for a total scale score, with higher scores indicating more depressive symptoms. This scale demonstrated adequate internal consistency ($\alpha=0.79$).

Self-esteem—The original Rosenberg Self-Esteem Scale was used. This included a 10-item self-report measure of global self-esteem, with statements related to overall feelings of self-worth or self-acceptance. Items are answered on a 4-point scale ranging from strongly agree (3) to strongly disagree (0). Some items were reverse-scored, and all items were totalled. Totals range from 10 to 40, with higher scores indicating higher self-esteem ($\alpha=0.76$) (Rosenberg, 1965).

Experience of violence within the community—Participants were asked: “Have you ever seen an act of violence towards someone else not a member of your family?” and “Have you ever experienced an act of violence?” They were also asked about partner violence: “Have you ever been hit, slapped or physically hurt on purpose by a boyfriend/girlfriend?” Items were scored independently as “yes” or “no”, in line with (Vrana & Lauterbach, 1994).

Statistical analysis

Descriptive statistics and frequencies were determined for continuous and categorical variables and are presented by ethnicity respectively. Predictors of high parent-adolescent communication were determined using logistic regression. An overall model including ethnicity as a moderator was run before separate models were developed for each ethnic group independently.

Variables were considered for inclusion in the univariate model, based on the existing literature or the variables' importance within contextual dynamics. Depression, self-esteem, and Parent-Guardian Support (PGS) maternal and paternal were all entered into the model as continuous variables. The parent's level of education was split into primary and some secondary education vs. matriculation and some tertiary education. The mother's employment was dichotomised into employed and unemployed. For parents' marital status, married (customary or legal marriages), same sex relationships and living together but unmarried were grouped into cohabiting. The category unmarried included divorced and not living together. Due to missing or unknown data, some variables presented in the descriptive tables (see Tables 1 and 2) were excluded from the final models. A backward stepwise logistic regression was used in developing the most parsimonious multivariate models. Model fit was determined using the Hosmer and Lemeshow Goodness-of-Fit test with models that had p-values >0.7 being used in the analysis.

Results

Demographics

Participants ranged in age from 16 to 18 years of age. Age range was fairly equally spread across ethnicity, except among the White participants, who were predominantly younger, 16 years of age (n=52, 50.5%). Participants were mostly Black (n=506, 62%), heterosexual (n=750, 92%) youths. The largest proportion of LGB youth were White (n=13, 12.6%). There were more female Black (n=298, 58.9%), Coloured (n=62, 57%) and Indian (n=59, 55.7%) participants than female White participants (n=50, 48.5%). A total of 62% (n=314) of Black and 51.5% (n=52) of White participants' parents were unmarried or unknown, whereas 55.1% (n=59) and 67% (n=71) of Coloured and Indian participants' parents, respectively, were reported to be cohabiting. Black participants reported more mothers to be the head of their household (n=163, 32.2%) than did participants from any other ethnic group.

Depression

Overall, 69 (8%) showed signs of clinical depression. Of the White participants 11% reported high levels of depression, as indicated by scores >19. The lowest levels of depression were reported amongst the Coloured community, where only 2.8% (n=3) of participants reported being depressed.

Self-esteem

All Coloured participants displayed high self-esteem, as indicated by scores higher than 14, followed by Indian participants (n=97, 91.5%). Black and White participants had low levels of self-esteem (n=486, 96%, and n=93, 90.3% respectively).

Parent/guardian support

Overall, high maternal PGS was reported (n=471, 51%), with equal levels of high and low paternal PGS being reported (n=408, 50%).

Parent-adolescent communication

Across the sample, 57% (471) of participants reported high levels of parent-adolescent communication. White and Indian participants tended to report parent-adolescent communication lower than 11, whereas Black and Coloured participants tended to report higher levels of >11 (Table 3). Parent-adolescent communication was most likely to be initiated by parents or legal guardians (n=541, 76%) and was also found to be “somewhat” (n=197, 27%) and “a great deal” (n=467, 64%) helpful. As can be seen on Figure 1, pregnancy and HIV were the topics most spoken about and circumcision was discussed the least. Black and Coloured participants reported higher levels of communication on all topics.

Overall logistic regression model for high parent-adolescent communication

Univariate—As can be seen from Table 4, the overall model found gender to be a significant predictor (OR: 1.57, CI:1.19-2.08) at a univariate level – females were more likely than males to report high parent-adolescent communication. Being Indian (OR: 0.88, CI:1.43-2.5) or White (OR: 0.57, CI:0.372-0.87) versus Black was a good predictor at this level. Depression was less likely to be associated with high parent-adolescent communication (OR: 0.95, CI:0.93-0.97), but self-esteem was more likely to be a predictor of high parent-adolescent communication (OR:1.07, CI:1.03-1.10). Finally, violence witnessed within a community proved to be a strong predictor of high parent-adolescent communication (OR: 1.39, CI:1.04-1.86).

Multivariate—Age was a significant predictor of high parent-adolescent communication, with 17-year-olds being less likely than 18-year-olds to report high parent-adolescent communication (OR: 0.7, CI: 0.48-1.01). Being female was a predictor of high parent-adolescent communication (OR: 1.77, CI: 1.31-2.39), while being Indian versus Black did not (OR: 0.23, CI: 0.14-0.37). High parent-adolescent communication was less likely with a higher crowding index (OR: 0.84, CI: 0.72-0.97), as well as higher levels of depression (OR: 0.94, CI: 0.92-0.97).

Logistic regression models by ethnic group for high parent-adolescent communication

Amongst other variables, gender, age, the crowding index and depression were found to be significant by ethnicity within the univariate models, as set out in Table 5. In these models, gender was a significant predictor of parent-adolescent communication amongst Black participants (OR:1.47, CI: 1.0-2.17). Furthermore, unemployed mothers were less likely to engage in high parent-adolescent communication (OR: 0.64, CI: 0.44-0.95) amongst this

group. Having a sibling at home (OR: 0.54, CI: 0.31-0.96), a greater crowding index (OR: 0.81, CI: 0.68-0.96) and increasing levels of depression (OR: 0.95, CI: 0.92-0.99) were also less likely to be associated with high levels of parent-adolescent communication amongst Black participants. However, living in a female-headed household was a predictor of high parent-adolescent communication (OR: 1.49, CI: 1.01-2.20) in this group. Amongst Indian participants, gender was the only significant predictor of high parent-adolescent communication (OR: 2.67, CI: 1.05-6.77). Gender was also a significant predictor of parent-adolescent communication amongst White participants (OR: 2.96, CI: 1.21-7.18). However, living in a female-headed household was a predictor of parent-adolescent communication of <11 amongst this group (OR: 0.36, CI: 0.15-0.89). Amongst Coloured participants, having ever repeated school was associated with high parent-adolescent communication (OR: 3.16, CI: 1.14-8.74). Parent-adolescent communication was less likely for Coloured participants who reported higher levels of depression (OR: 0.90, CI: 0.81-1.0). Furthermore, higher levels of self-esteem were associated with higher parent-adolescent communication (OR: 1.185, CI: 1.003-1.400), although the same could not be said for maternal PGS, where increasing levels of PGS was associated with less parent-adolescent communication (OR: 0.91, CI: 0.82-1.0).

Discussion

This study contributes to a growing body of evidence on parent-adolescent communication in communicating sexual knowledge. In describing parent-adolescent communication about sexuality, the data indicate a number of interesting aspects of parent-adolescent communication in post-apartheid South Africa. In this study, parent-adolescent communication was found to be at an overall lower level than that reported in other studies done elsewhere. For example, DiClemente et al. (2001) reported a parent-adolescent communication median score of 16 amongst African American female adolescents. This indicates that by comparison, parent-adolescent communication in South Africa is at a lower level. South Africa has a legacy of racial segregation and inequalities, and a historically migrant labour force (Coovadia et al., 2009). The overall lower levels of high parent-adolescent communication may reflect breakdowns within traditional family structures, leading to poor communication patterns between parents and adolescents.

In identifying inter-racial predictors of parent-adolescent communication, gender was found to be an important predictor of high sexual communication. This was of particular importance amongst the Black, Indian and White populations, all of which reported that female participants are more likely to engage in higher parent-adolescent communication. This result is consistent with the international literature on parent-adolescent communication, which highlights the gender of both the child and the parent as an important predictor in parent-adolescent communication (DiIorio et al., 2003). This finding also illustrates the potential benefit of parent-adolescent communication amongst young women, who are three times more likely to contract HIV than their male counterparts (Shisana et al., 2009). However, it also highlights the need for improved parent-adolescent communication amongst young males and the parents of young males in addressing knowledge about and attitudes towards sexual and reproductive health issues. This may form a central aspect of

developing more appropriate gender norms and in addressing gender disparities in South Africa.

The study highlighted that adolescents perceive parent-adolescent communication to be helpful when it did take place. This finding suggests the beneficial value for this age group of communicating with parents regarding sexual topics. In conjunction, the above findings indicate a need for the improvement of overall parent-adolescent communication amongst South African families, as confirmed by Bhana et al. (2004), Phetla G et al. (2008) and Paruk et al. (2009). This suggests that programmes need to be geared to both parents and youth in encouraging and empowering such conversations.

Results from this study indicated that pregnancy and HIV are the topics most spoken about across ethnic groups. The popularity of these as topics may be reflective of pre-existing messaging campaigns (such as LoveLife) which attempt to address problems such as teenage pregnancy and the HIV pandemic. Such programmes may benefit from targeted parent projects to complement their efforts to widen the existing scope of their work.

In addition to this, the findings revealed overall low levels of parent-adolescent communication amongst the Indian and White populations. Where prevalence data shows high HIV levels amongst Black populations (Shisana et al., 2009), this project highlights that the highest levels of communication are found amongst Black participants. This suggests that a better understanding of the quality and content of communication is required in planning risk reduction strategies which empower parents to deliver sexual knowledge and adolescents to make appropriate decisions regarding their sexual behaviour. South African programmes which improve parental ability to discuss sex-related concerns need to be implemented cross-racially. Cognizance should be given to the low rates of HIV found amongst certain populations and the potential role which parent-adolescent communication plays in developing resilience to sex-related concerns.

Furthermore, findings show that unemployed Black mothers are less likely to engage in parent-adolescent communication. While parental level of education has been stressed as a predictor of parent-adolescent communication, employment status has not. In South Africa, unemployment stands at 4.5 million, with women accounting for 48.2% of these individuals, who are predominantly poorly educated and Black (Statistics South Africa, 2012). While attempts have been made to address gender disparities, the increasing numbers of female-headed households, limited economics and financial insecurity mean that gender inequalities are pervasive, and Black African women remain the poorest and most disadvantaged group in South Africa (Department of Health, 2003; Campbell, 2000). In this study, a large portion of the participants did not know their mother's level of education, with the result that this variable was omitted from the models. Hence, lack of employment may be reflective of both the economic climate and educational concerns leading to poor parent-adolescent communication amongst Black mothers. In the short term, interventions which specifically target this subpopulation in disseminating sexual information and the skills to engage in conversations with adolescents may lead to improvements in parent-adolescent communication. In the long term, an urgent scaling-up of South Africa's educational sector

in developing an economically viable generation to whom the necessary knowledge and skills have been imparted to disseminate information to youth is required.

Female-headed households are more likely amongst Black populations, but less likely amongst White populations, to engage in parent-adolescent communication. South Africa's colonial and apartheid history has been typified by the migration of cheap Black male labour to the mining sector, paving the way for female-headed households to become relatively common (Coovadia et al., 2009). At the same time, there are two competing South Africa discourses on sexuality. In one, sex is seen as rooted in religion and is geared to procreation, with sex being a taboo topic of conversation. The other reflects a traditional Black African attitude towards sex as a normal part of life (Coovadia et al., 2009), which may have led to Black mothers' being more empowered in discussing sexual matters with their children. Moreover, the nature of sexual messaging directed towards Black populations as an at-risk group for HIV transmission may compound this and explain the dearth of communication on sexual issues amongst White female-headed households. Future research could tease out these dynamics in order to develop appropriate interventions.

Black adolescents who have siblings at home are less likely to engage in parent-adolescent communication, and should be the target of interventions. The compound effect of this would be the dissemination of information across multiple family members in order to potentially improve intra-family communication.

Depression also proved to be a factor in high parent-adolescent communication, as higher levels of depression reduce the likelihood of high parent-adolescent communication. Thus, programmes need to be put in place for the early detection of depression amongst adolescent populations, followed by contextually appropriate interventions in addressing this problem. The high levels of self-esteem found amongst Coloured adolescents is encouraging, and this could be leveraged through programmes which encourage greater adolescent-initiated conversations regarding sexual topics. However, some caution should be exercised in interpreting these results, as self-reported high self-esteem can be indicative of a strong sense of security, or of immense defensiveness (Baumeister, Campbell, Krueger, & Vohs, 2003; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003).

The findings of this study highlight the key role which mothers play in parent-adolescent communication. This is consistent with South Africa's social and political history, as the country now has a large proportion of female-headed households. Furthermore, the entrenchment of gender inequalities leaves many women unable to negotiate safer sexual practices or equipped to disseminate appropriate sexual knowledge effectively to their children.

The limitations of this study are the risk of selection bias because a non-random sample was selected. Furthermore, the research lacks evidence on father figures, due to missing data. In South Africa, some evidence has emerged that suggests that migratory labour (Coovadia et al., 2009) and absent fathers (Nduna & Jewkes, 2011) may be relevant. Such omissions could be indicative of a lack of paternal influence. However, this argument cannot be categorically made and more evidence is required to increase understanding of the impact of

absent fathers upon adolescent sexual and reproductive health. In addition, data was not collected on parents HIV status, which may have impacted sexual communication. Social desirability may also have influenced respondents who were interviewed using an interviewer administered questionnaire. Finally, the scales were not adapted to the South African context however the reliability scores provided the researchers with the confidence to continue.

Conclusion

This study looked specifically at parent-adolescent communication about sexual topics, but excluded additional aspects of parent-adolescent communication, such as the quality of this communication. Future studies in South Africa are needed to address additional parent-adolescent communication topics, and interventions in line with this study should be mindful of the opportunity they present to encourage effective overall communication between adolescents and parents, while delivering content geared to sexual parent-adolescent communication. Focused messaging from HIV and pregnancy campaigns may have encouraged communication within certain at-risk groups. However, the overall levels of parent-adolescent communication in South Africa are fairly low. A concerted effort is required to develop programmes which impart both the knowledge and the skills required for effective parent-adolescent communication. These need to be cross-racial, and not specific to one at-risk group, while negating the potential benefits for another.

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Figure 1.
Parent-adolescent communication subsections by ethnicity: sometimes/often

Table 1

Descriptive statistics for demographic variables overall and by ethnicity

<u>VARIABLE</u>	<u>OVERALL</u> n=822 n (%)	<u>BLACK</u> n=506 n (%)	<u>COLOURED</u> n=107 n (%)	<u>INDIAN</u> n=106 n (%)	<u>WHITE</u> n=103 n (%)
Age	-				
16	275 (33%)	154(30.43%)	38(35.5%)	31(29.3%)	52(50.5%)
17	254 (31%)	167(33%)	34(31.8%)	34(32.1%)	19(18.5%)
18	293 (36%)	185(36.56%)	35(32.7%)	41(38.7%)	32(31.1%)
Gender					
Male	353 (43%)	208(41.11%)	45(42.1%)	47(44.3%)	53(51.5%)
Female	469 (57%)	298(58.89%)	62(57.0%)	59(55.7%)	50(48.5%)
Repeated School	241 (29%)	138(27.3%)	36(33.6%)	25(23.6%)	42(40.8%)
Sexual Orientation	-				
Heterosexual	750 (92%)	464 (91.7%)	98(91.6%)	98(99%)	90(87.4%)
LGB	65 (8%)	42(8.3%)	9(8.4%)	1(1%)	13(12.6%)
Mother's Level of Education	-				
Some secondary school education	306 (45%)	186(46.7%)	40(41.7%)	39(40.6%)	41(48.2%)
Matric and/or post school	369 (55%)	212(53.3%)	56(58.3%)	57(59.4%)	44(51.8%)
Father's Level of Education	-				
Some secondary school education	169 (35%)	78(31.6%)	35(44.9%)	23(27.4%)	33(43.5%)
Matric and/or post school	316 (65%)	169(68.4%)	43(55.1%)	61(72.6%)	43(56.6%)
Parent's Marital Status	-				
Cohabiting	373 (45.5%)	192(37.9%)	59(55.1%)	71(67%)	51(49.5%)
Unmarried/Unknown	449(54.5%)	314(62%)	48(44.9%)	35(33%)	52(51.5%)
Mother Employment	-				
employed	479 (58.3%)	298(58.9%)	70(65.4%)	71(67%)	40(38.8%)
Unemployed/unknown	343(41.7%)	208(41.1%)	37(34.6%)	35(33%)	63(61.2%)
Father Employment	-				
employed	479 (65%)	254(50.2%)	70(65.4%)	83(78.3%)	72(69.9%)
Unemployed	89 (11%)	61(12.1%)	15(14%)	2(1.9%)	11(10.7%)

<u>VARIABLE</u>	<u>OVERALL</u> n=822 n (%)	<u>BLACK</u> n=506 n (%)	<u>COLOURED</u> n=107 n (%)	<u>INDIAN</u> n=106 n (%)	<u>WHITE</u> n=103 n (%)
unknown	254 (35%)	191 (37.8%)	22 (15%)	21 (29.8%)	20 (19.4%)
Head of Household Person					
Mother	-	-	-	-	-
Father	269 (33%)	163 (32.2%)	39 (36.5%)	34 (32.1%)	33 (32%)
Grandparent	310 (38%)	147 (29%)	48 (44.9%)	66 (62.3%)	49 (47.6%)
Aunt/Uncle	142 (17%)	122 (24.1%)	8 (7.5%)	1 (0.9%)	11 (10.7%)
other	54 (7%)	44 (8.7%)	5 (4.7%)	1 (0.9%)	4 (3.9%)
Head of Household by Gender	47 (6%)	30 (5.9%)	7 (6.5%)	4 (3.8%)	6 (5.8%)
Male >18 years of age	-	-	-	-	-
Female >18 years of age	373 (45.5%)	189 (37.5%)	62 (58%)	66 (62%)	56 (54.4%)
Sibling at Home	447 (54.5%)	315 (62.5%)	45 (42%)	40 (38%)	47 (45.6%)
Crowding Index: Median(IQR)	695 (85%)	441 (87.2%)	94 (87.9%)	75 (70.8%)	85 (82.5%)
	1.25 (0.8-1.8)	1.25 (0.8-1.75)	1.3 (0.83-2.0)	0.8 (0.6-1.14)	1.67 (1.5-2)

Table 2

Descriptive statistics for predictive variables by ethnicity

VARIABLE	OVERALL n=822 n (%)	BLACK n=506 n (%)	COLOURED n=107 n (%)	INDIAN n=106 n (%)	WHITE n=103 n (%)
Depression	-				
High	69 (8%)	45(8.9%)	3(2.8%)	9(8.5%)	12(11.7%)
Low	753 (92%)	461(91.1%)	104(97.2%)	97(91.5%)	91(88.4%)
Median (IQR)	8(5.0-13.0)	9(5.0-13.0)	7(4.0-11.0)	8(4.0-12.0)	9(6.0-14.0)
Self-Esteem	-				
High	441 (54%)	20(4%)	107(100%)	97(91.5%)	10(9.7%)
Low	381 (46%)	486(96%)	0	9(8.5%)	93(90.3%)
Median (IQR)	22(19.0-25.0)	22(19.0-24.0)	23(20.0-25.0)	23(20.0-26.0)	21(18.0-24.0)
PGS Maternal	-				
High	471 (57%)	290(57.3%)	57(53.3%)	68(64.2%)	56(54.4%)
Low	351 (43%)	216(42.7%)	50(46.7%)	38(35.9%)	47(45.6%)
Median (IQR)	12(10.0-16.0)	12(10.0-16.0)	12(10.0-15.0)	13(11.0-16.0)	12(11.0-17.0)
PGS Paternal	-				
High	408 (50%)	226(44.7%)	62(57.9%)	66(62.3%)	54(52.4%)
Low	414 (50%)	280(55.3%)	45(42.1%)	40(37.7%)	49(47.6%)
Median (IQR)	11(0-16.0)	10(0-16.0)	13(10.0-18.0)	13(10.0-16.0)	12(0-17.0)
Community Violence Seen	-				
Yes	552(67%)	365(72.3%)	71(66.4%)	36(34.2%)	80(77.7%)
No	268(33%)	140(27.7%)	36(33.6%)	69(65.7%)	23(22.3%)

Table 3

Single item parent-adolescent communication questions by ethnicity

<u>VARIABLE</u>	<u>OVERALL</u> n=822 n (%)	<u>BLACK</u> n=506 n (%)	<u>COLOURED</u> n=107 n (%)	<u>INDIAN</u> n=106 n (%)	<u>WHITE</u> n=103 n (%)
Original parent-adolescent communication	-				
High	471 (57%)	316(62.5%)	73(68.2%)	34(32.1%)	48(46.6%)
Low	351 (43%)	190(37.5%)	34(31.8%)	72(67.9%)	55(53.4%)
Who Initiated the parent-adolescent communication	-				
Self	171(24%)	100(21.4%)	27(28.4%)	22(31%)	22(28.2%)
parent/guardian	541(76%)	368(78.6%)	68(71.6%)	49(69%)	56(71.8%)
How helpful was parent-adolescent communication	-				
not at all	62(9%)	38(8%)	4(4.3%)	8(11.3%)	12(14.1%)
Somewhat	197(27%)	122(25.6%)	17(18.3%)	35(49.3%)	23(27.1%)
a great deal	467(64%)	317(66.5%)	72(77.4%)	28(39.4%)	50(58.8%)
Discuss decisions with you	-				
yes	681(83%)	418(82.6%)	96(89.7%)	88(83%)	79(76.7%)
no	141(17%)	88(17.4%)	11(10.3%)	18(17%)	24(23.3%)
Discussed decisions about you	-				
yes	666(81%)	409(80.8%)	99(92.5%)	83(78.3%)	75(72.8%)
no	156(19%)	97(19.2%)	8(7.5%)	23(21.7%)	28(27.2%)
Has a say in the decision	-				
yes	591(72%)	359(71%)	84(78.5%)	77(72.6%)	71(68.9%)
no	231(28%)	147(29%)	23(21.5%)	29(27.4%)	32(31.1%)

Table 4

High parent-adolescent communication univariate and multivariate models by overall

<u>Variable</u>	<u>Univariate</u>		<u>OVERALL</u>	
	OR (CI)	p-value	OR (CI)	p-value
Age	-	-	-	-
16 vs 18	0.776(0.555-1.083)	0.35	0.720(0.502-1.003)	0.7
17 vs 18	0.795(0.565-1.118)	0.5	0.697(0.484-1.005)	0.05
Gender	-	-	-	-
Female vs Male	1.571(1.188-2.079)	0.0016	1.770(1.309-2.394)	0.0002
Race	-	-	-	-
Coloured vs Black	1.291(0.865-2.091)	0.1887	1.164(0.734-1.848)	0.51
Indian vs Black	0.88(1.427-2.499)	<.0001	0.230(0.143-0.371)	<0.0001
White vs Black	0.57(0.372-0.874)	0.0098	0.650(0.413-1.023)	0.06
Repeated School Ever	-	-	-	-
Never Repeated School vs Repeated	1.175(0.869-1.588)	0.294	-	-
Parent's Marital Status	-	-	-	-
Unmarried vs Cohabiting	1.144(0.867-1.510)	0.34	-	-
Mother Employed	-	-	-	-
unemployed/unknown vs employed	0.883(0.705-1.107)	0.2814	0.760(0.557-1.036)	0.08
Head of Household	-	-	-	-
Female vs Male	1.193(0.904-1.575)	0.212	-	-
Sibling at Home vs None	1.444(0.988-2.110)	0.575	0.715(0.470-1.087)	0.11
Crowing Index	0.890(0.780-1.016)	0.084	0.837(0.721-0.970)	0.019
Depression	0.952(0.931-0.973)	<0.0001	0.942(0.920-0.966)	<0.0001
Self Esteem	1.067(1.032-1.104)	0.0001	-	-
PGS Maternal	0.983(0.961-1.007)	0.158	-	-
PGS Paternal	0.996(0.980-1.012)	0.6007	-	-
Community Violence Seen vs Unseen	1.390(1.036-1.856)	0.028	-	-

Table 5

High parent-adolescent communication univariate and multivariate models by ethnicity

Variable	BLACK				COLOURED				INDIAN				WHITE			
	Univariate	P-value	OR (CI)	Multivariate	Univariate	P-value	OR (CI)	Multivariate	Univariate	P-value	OR (CI)	Multivariate	Univariate	P-value	OR (CI)	Multivariate
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Age																
16 vs 18	0.744(0.479-1.567)	0.223	-	-	0.982(0.356-2.708)	0.65	-	-	1.588(0.610-4.136)	0.0473	-	-	0.428(0.174-1.052)	0.137	0.513(0.183-1.436)	0.203
17 vs 18	0.896(0.579-1.386)	0.846	-	-	0.64(0.236-1.771)	0.33	-	-	0.413(0.139-1.233)	0.09	-	-	0.616(0.196-1.933)	0.907	0.602(0.171-2.124)	0.43
Gender																
Female vs Male	1.315(0.913-1.893)	0.141	1.471(0.998-2.168)	0.005	1.607(0.707-3.654)	0.257	-	-	2.537(1.062-6.059)	0.036	2.666(1.050-6.766)	0.039	2.1(0.955-4.616)	0.065	2.958(1.21-7.183)	0.0174
Repeated School Ever																
Never Repeated School vs Repeated	1.193(0.799-1.780)	0.389	-	-	3.437(1.457-8.110)	0.0048	3.160(1.143-8.737)	0.026	1.286(0.479-3.452)	0.618	-	-	0.486(0.219-1.081)	0.077	0.449(0.174-1.154)	0.089
Parent's Marital Status																
Unmarried vs Cohabiting	1.071(0.739-1.550)	0.718	-	-	0.738(0.326-1.671)	0.466	2.710(0.694-10.662)	0.151	1.162(0.492-2.747)	0.732	-	-	0.825(0.380-1.791)	0.626	-	-
Mother Employed																
unemployed/unknown vs employed	0.890(0.669-1.185)	0.426	0.642(0.436-0.947)	0.026	0.634(0.296-1.360)	0.242	2.809(0.845-9.342)	0.092	0.898(0.405-1.987)	0.789	-	-	2.003(1.014-3.959)	0.0456	-	-
Head of Household																
Female vs Male	1.438(0.993-2.082)	0.054	1.491(1.010-2.203)	0.044	0.365(0.158-0.842)	0.0181	3.345(0.867-12.903)	0.079	1.484(0.645-3.414)	0.353	0.538(0.245-1.183)	0.123	0.362(0.148-0.891)	0.0283	-	-
Sibling at Home vs None	1.401(0.828-2.371)	0.209	0.542(0.306-0.957)	0.035	0.610(0.157-2.376)	0.476	-	-	1.929(0.735-5.062)	0.182	0.333(0.107-1.041)	0.058	0.647(0.232-1.800)	0.404	2.198(0.695-7.051)	0.185
Crowing Index	0.831(0.708-0.794)	0.0224	0.808(0.681-0.958)	0.014	0.757(0.464-1.235)	0.245	-	-	2.181(0.989-4.809)	0.0534	2.132(0.909-5.001)	0.0818	0.730(0.472-1.129)	0.157	-	-
Depression	0.944(0.917-0.972)	0.0001	0.953(0.919-0.988)	0.0082	0.877(0.807-0.954)	0.0022	0.902(0.814-0.999)	0.047	0.966(0.907-1.029)	0.286	0.941(0.877-1.01)	0.0907	1.011(0.953-1.073)	0.717	-	-
Self Esteem	1.091(1.042-1.142)	0.0002	1.047(0.990-1.107)	0.106	1.215(1.061-1.392)	0.005	1.185(1.003-1.400)	0.046	1.024(0.944-1.110)	0.568	-	1.012(0.926-1.105)	0.794	-	-	-
PGCS Maternal	1.002(0.974-1.032)	0.866	-	-	0.912(0.834-0.996)	0.407	0.907(0.823-0.999)	0.047	0.934(0.849-1.027)	0.159	-	1.011(0.951-1.074)	0.728	-	-	-
PGCS Paternal	1.006(0.986-1.026)	0.565	-	-	0.977(0.929-1.028)	0.37	-	-	0.973(0.917-1.032)	0.356	0.941(0.878-1.008)	0.081	0.995(0.949-1.042)	0.82	-	-
Community Violence Seen vs Unseen	1.070(0.716-1.598)	0.741	-	-	0.918(0.386-2.183)	0.847	-	-	1.143(0.483-2.706)	0.761	-	-	2.402(0.892-6.468)	0.082	0.429(0.138-1.335)	0.144