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## Parenting and Youth Sexual Risk in Context: The Role of Community Factors

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### Abstract

Black South African youth are disproportionately affected by HIV, and risky sexual behaviors increase youths' vulnerability to infection. U.S.-based research has highlighted several contextual influences on sexual risk, but these processes have not been examined in a South African context. In a convenience sample of Black South African caregivers and their 10–14-year-old youth ( $M_{age}=11.7$ ,  $SD=1.4$ ; 52.5% female), we examined the relation between parenting and youth sexual risk within the context of community-level processes, including neighborhood quality and maternal social support. Hypotheses were evaluated using structural equation modeling. Results revealed that better neighborhood quality and more social support predicted positive parenting, which in turn predicted less youth sexual risk. There was a significant indirect effect from neighborhood quality to youth sexual risk via parenting. Results highlight the importance of the community context in parenting and youth sexual risk in this understudied sample. HIV prevention-interventions should be informed by these contextual factors.

### Keywords

South Africa; HIV; Sexual risk; Adolescence; Parenting; Neighborhood

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With approximately 6.8 million people living with HIV, South Africa hosts the world's largest HIV epidemic (UNAIDS, 2014). The virus affects 8.7% of all South African youth between the ages of 15 and 24 (Statistics South Africa, 2014), with Black South African youth overrepresented in HIV prevalence statistics (Shisana et al., 2014). HIV in South Africa is most commonly transmitted via heterosexual sex, and risky sexual behaviors leave youth vulnerable to HIV infection (Shisana et al., 2009). Youths' sex-related attitudes, intentions, and pre-coital behaviors prior to first sexual intercourse predict later sexual activity, and, in turn, HIV risk (Protogerou, Flisher, Aarø, & Mathews, 2012). Risk reduction interventions may thus be most effective prior to the onset of risky behaviors (Dittus, Miller,

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Kotchick, & Forehand, 2004). An examination of predictors of the pathway to sexual risk behaviors is a vital step to reducing HIV incidence among Black South African youth.

Bronfenbrenner's (1979) ecological systems theory asserts that development is affected by contextual factors at multiple levels, including parenting practices (Rothbaum & Weisz, 1994), mothers' social support (Burchinal, Follmer, & Bryant, 1996), neighborhood quality (Leventhal & Brooks-Gunn, 2000), and the sociocultural context (Shoveller, Johnson, Langille, & Mitchell, 2004). However, a paucity of research examines these processes among South African families. The South African context presents a unique set of cultural, economic, historical, and social characteristics that dynamically influence family functioning, community characteristics, and youth development. Beyond the HIV epidemic, Black South African families are impacted by contextual challenges such as limited access to services due to high poverty rates and a history of discriminatory laws and regulations during and since the apartheid era. For example, Xhosa-speaking Black South Africans growing up under apartheid-era laws were forced to receive their education in Afrikaans and English, rather than their native tongue (Finchilescu & Tredoux, 2010). Other laws, such as the Bantu Authorities Act and Group Areas Act, stripped citizenship from Black South Africans and forced them from their native lands to state-designated "homelands," such as the Transkei for the Xhosa (Lee, 2009). Further, Black South African families were forced into migrant labor, which, coupled with HIV-related loss, disrupted family structures and contributed to shifting social support networks (Dunn & Parry-Williams, 2008; Petersen, Bhana, & McKay, 2005). The unique nature of the South African context highlights the need for empirical research on family functioning and youth HIV risk from an ecologically-driven perspective. Thus, in addition to ecological systems theory, the selection of constructs in the current study was guided by an understanding of the broader sociocultural context gained through qualitative formative work conducted with participants demographically similar to those included in the current study (Armistead et al., 2014; Zimmerman, 2011).

Sexual risk behaviors predict HIV infection (Simbayi et al., 2005), and beginning in middle adolescence, South African youth tend to report high levels of risk behaviors (Richter et al., 2007). At least half of South African youth engage in sexual intercourse by the age of 16, with Black South Africans and males becoming sexually active earlier than other ethnic groups and females, respectively (Eaton et al., 2003). HIV prevention efforts are most effective before youth begin having sexual intercourse (Bell, Bhana, Petersen, & McKay, 2008). This is particularly true in the South African context, given the high prevalence of HIV infection and the risk this confers for young people who may have limited power to protect themselves within sexual contexts (Pettifor, Measham, Rees, & Padian, 2004). Thus it is essential to examine the precursors (e.g., attitudes and intentions) that may lead to risky sexual behavior among early adolescents. U.S. research has demonstrated a reliable sequence of pre-coital sexual behaviors that lead to risky coital sexual behaviors (Jakobsen, 1997). According to a recent review, studies examining precursors (e.g., attitudes and intentions) among youth in sub-Saharan Africa demonstrated strong predictive ability of these precursors, with  $R^2$  coefficients ranging from 0.14 to 0.67 (Protogerou et al., 2012). The current study included a sample of Black South African early adolescents (ages 10–14) who, based on previous research (Eaton et al., 2003; Jakobsen, 1997), were expected to report engaging in primarily pre-coital, but not coital, sexual behaviors. Thus, guided by a

call in the literature to investigate HIV risk prior to first sexual intercourse (Bell et al., 2008), we examined intentions to engage in sexual activity and pre-coital behaviors as facets of sexual risk that are expected to be related to later sexual behavior and risk of HIV infection.

## Parenting and Youth Sexual Risk

U.S.-based research demonstrates that youth sexual risk is influenced by parenting (Deptula, Henry, & Schoeny, 2010; Paikoff et al., 1997). Among South African families, only a few empirical studies have tested this relation. Parental monitoring (parents' active role in supervising their children's activities; Dishion & McMahon, 1998) and parent-child relationship quality (support parents provide children through affection, compassion, and nurturing; Barber, Stolz, & Olsen, 2005) have been negatively related to youths' risky sexual behaviors (Brook, Morojele, Zhang, & Brook, 2006; Eaton et al., 2003); thus, monitoring and relationship quality were included as constructs in the current study. Further, qualitative interview participants in this study's formative work indicated that parental involvement is an essential, yet lacking, aspect of parenting among Black South African families (Armistead et al., 2014). Parental involvement is defined as parents' active role in various aspects of their children's lives (e.g., academic and social aspects; Pearson, Muller, & Frisco, 2006). Parental monitoring, involvement, and parent-child relationship quality all comprise aspects of positive parenting. Given U.S.-based research indicating parenting is influenced by contextual factors (Kotchick & Forehand, 2002), as well as evidence from formative work suggesting the importance of specific parenting practices for youth adjustment (Armistead et al., 2014), the current study sought to extend previous research by examining the relation between parenting and youth sexual risk within the context of community-level processes, including neighborhood quality and maternal social support.

## Parenting in Context: Neighborhood Quality and Maternal Social Support

In the U.S., living in high-risk neighborhoods is indirectly and positively associated with adolescents' sexual risk behaviors via decreases in positive parenting (Kotchick, Dorsey, & Heller, 2005; Odgers et al., 2012). However, a few studies have found that poorer neighborhood quality is associated with *increases* in positive parenting practices — specifically parental monitoring (Armistead, Forehand, Brody, & Maguen, 2002; Jones, Forehand, Connell, Armistead, & Brody, 2005). These discrepant findings may be partially due to varying conceptualizations of positive parenting. Although parents in high-risk neighborhoods may increase their engagement in the specific behavior of monitoring by necessity, neighborhood risk seems to have a detrimental effect on positive parenting overall.

Though less frequently studied, neighborhood quality in South Africa is also an important context in which to understand youth adjustment and family functioning (Tomita & Burns, 2013). Formative qualitative work highlighted caregivers' concerns regarding neighborhood safety and its impact on their children's sexual risk (Zimmerman, 2011). One quantitative South African study provided preliminary evidence that neighborhood safety and cohesion are negatively associated with youth sexual risk behaviors (Burgard & Lee-Rife, 2009). A second study, conducted with the current sample, examined parenting in the context of

neighborhood conditions in South Africa (Tarantino et al., 2014). Tarantino and colleagues demonstrated that neighborhood cohesion was positively related to parent-child communication about sex but only in the context of low social support. The current study extends these findings by examining other parenting practices (i.e., monitoring/involvement and relationship quality) and their relation to precursors to sexual risk behaviors.

Parents' perceived social support also plays an important role in family functioning. Although social support is related to improvements in parenting (Su & Hynie, 2011), the nature of this relation is unclear (Thoits, 2011). Two primary conceptualizations of social support have emerged in the literature: a main effect model and a buffering model (see Thoits, 2011; Turner & Brown, 2010; for reviews). The main effect model posits that social support is directly related to positive mental and physical health, regardless of level of stress or risk. Alternatively, the buffering model hypothesizes an interaction between stressors and social support, such that social support is more strongly related to positive outcomes in the presence of high levels of stress or risk (Armstrong, Birnie-Lefcovitch, & Ungar, 2005).

Previous U.S. research demonstrates support for both models. In accordance with the main effect model, studies have demonstrated that social support equally benefits parenting across high-risk and low-risk families (Byrnes & Miller, 2012; Su & Hynie, 2011). However, consistent with the buffering hypothesis, other studies indicated that high levels of social support attenuated the detrimental impact of stress (e.g., poor neighborhood quality) on parenting practices (DeGarmo, Patras, & Eap, 2008; Kotchick et al., 2005; Prelow, Weaver, Bowman, & Swenson, 2010). The inconsistent findings may be partially attributed to differences in methodology, measurement, and operationalization of stress and support (Thoits, 2011). The potential main and buffering effects of social support have not been explored with a South African sample. Rapid urbanization has led to a shift in traditional support structures, and many caregivers may increasingly rely on social support from both kin and nonkin networks (Skinner & Davids, 2006). Thus, informed by the South African sociocultural context, we measured social support from both friends and family members. Given the mixed findings in the U.S., it is important to investigate the function of social support among South African families, many of whom face high levels of neighborhood risk.

## Current Study

Black South African youth are particularly vulnerable to HIV infection (Shisana et al., 2014), and risky sexual intentions and pre-coital behaviors predict subsequent sexual activity and HIV risk (Protogerou et al., 2012). U.S.-based research has demonstrated that parenting influences sexual risk among youth (Deptula et al., 2010), and that parenting is embedded within a community context (Kotchick & Forehand, 2002). However, these processes have rarely been examined in a South African context, despite the urgent need to understand family and community factors that may be relevant to HIV prevention for these youth. Accordingly, guided by ecological systems theory (Bronfenbrenner, 1979), qualitative formative work, and the extant literature, the current study examined family and community processes involved in predicting youth sexual risk outcomes that are conceptualized as proxies for HIV risk. We extend previous research by examining the relation between

parenting and youth sexual risk within the context of community factors (i.e., neighborhood quality and social support) among a sample of South African caregiver-youth dyads. Specifically, we examined the following research questions: 1) Does parenting mediate the relation between neighborhood quality and youth sexual risk? 2) Does caregivers' social support (a) directly predict parenting or (b) moderate the relation between neighborhood quality and parenting? We hypothesized that low levels of neighborhood quality would be related to compromised parenting, which would in turn predict more precursors to sexual risk behaviors (i.e., attitudes, intentions, and pre-coital behaviors). Hypotheses for the second aim were exploratory. We anticipated that social support would either directly predict positive parenting or would buffer caregivers against the negative effects of poor neighborhood quality, such that at high levels of social support, the detrimental effects of neighborhood quality on parenting would be attenuated.

## Method

### Participants and Recruitment

Data for the current study were from a pilot study testing a family-based HIV prevention intervention known as Imbadu Ekhaya (Armistead et al., 2014). Participants resided in the Langa Township near Cape Town, South Africa. Langa has a population of approximately 50,000 and is Cape Town's oldest Black South African community. The vast majority (97%) of Langa's population identify Xhosa—one of South Africa's 11 official languages—as their primary language. Langa includes brick-constructed government housing as well as a large informal neighborhood known as “Joe Slovo,” comprised primarily of shacks clustered tightly together. Approximately 47% of the housing in Langa is comprised of informal dwellings or shacks, and 20% of the housing is free-standing brick homes (Affordable Land and Housing Data Centre, 2012). Traditional dwellings or huts, flats, townhouses (e.g. duplex, triplex), flats in a backyard or on shared property, tents, or non-housing units comprise the remaining 33% of dwellings (Affordable Land and Housing Data Centre, 2012). Langa is surrounded on all sides by a river, train tracks, and expressways, making it difficult for residents to move freely in and out. Given the diversity of living conditions and neighborhood contexts in Langa, we expect that participants residing in different parts of the city will report experiencing varying neighborhood qualities.

Project staff at the Cape Town Child Welfare Society recruited participants by going door-to-door to find eligible and interested dyads. Eligible caregivers were the primary caregiver for a child between 10 and 14 and were able to participate in either English or Xhosa. Based on our formative work and sociocultural considerations, only female caregivers were included in the sample. Ninety-nine caregiver-youth dyads enrolled. The mean age for parents was 42.6,  $SD=11.4$ , and for children was 11.7,  $SD=1.4$  years. Ethnic identifications included Xhosa (84%), Zulu (11%), Sotho (3%), and other (2%), and 53% of the youth were female. Caregivers were biological mothers (70%), grandmothers (16%), aunts (6%) and great-grandmothers (2%). Approximately 42% of caregivers had never married, and 71% of dyads resided in a brick home.

## Procedures

All procedures were approved by the universities' Institutional Review Board (U.S.) or Ethics Committee (South Africa). Data for the parent study were collected at three time points over six months, but only baseline data were used in this study. Caregivers and youth completed interviews separately at community sites using Audio Computer-Assisted Self-Interview software (ACASI). Before each assessment, interviewers obtained informed consent from caregivers and assent from the youth in the participants' language of choice. Parents were compensated with 70 Rand (approximately 10 USD) in grocery vouchers, and children received a small gift worth approximately 20 Rand (3 USD). Interviews lasted approximately one hour for caregivers and 30 minutes for children.

## Measures

**Piloting and translation**—Of the assessment instruments below, only the Household Economic and Social Status Index, Interaction Behavior Questionnaire, and Medical Outcomes Study Social Support Survey have previously been used with South African samples. To increase cultural sensitivity of the assessment, all measures were piloted and modified as needed, taking into account the sample's cultural and ethnic context. Modifications were based on input from South African researchers, family service providers, and families from Langa. Measures were then translated from English to Xhosa and back in accordance with the back-translation technique by Brislin (1970). Internal consistencies for all measures are provided in Table 1.

**Demographic information**—Caregivers completed the Household Economic and Social Status 17-item Index (HESSI; Barbarin & Khomo, 1997). Beyond participant age, gender, marital status, and education level, this measure assessed the presence of material resources (e.g., refrigerator, indoor toilet) in the home, which served as a proxy for socioeconomic status (SES). An example item is, "In what type of house/home do you and your child live?" All 17 items were summed, with higher scores indicating higher SES. As this variable was significantly negatively skewed, the scale was dichotomized at the median, such that scores could be either 0 (low resources) or 1 (high resources).

**Youth sexual attitudes**—The Child Sexual Attitudes measure (Ball, Pelton, Forehand, Long, & Wallace, 2004) assessed youths' attitudes about people having sex (both in general and personally), birth control and condom use, and responsibility for safe sex practices (e.g., "I think it's OK to take gifts in exchange for sex"). Two items were added that were relevant to South African sociocultural norms about sex. The 16-item measure utilizes a 3-point Likert scale ranging from 0 = *Not at all true* to 2 = *Very true*. Scores were averaged, and higher scores indicated more protective attitudes about sex.

**Youth sexual intentions**—Youths' sex-related intentions were assessed using a 7-item scale adapted from the Parents Matter! Program (Ball et al., 2004). This measure has adequate validity and reliability among U.S. samples (Ball et al., 2004) and assesses youths' report of their readiness to engage in sexual behaviors (e.g., "How many times have you thought about having sex with a girl/boy?"). Items were rated on a 4-point Likert scale and



summed, with higher scores indicating greater sexual intentions. Youth responding they never thought about having sex were not asked further questions regarding intentions.

**Youth pre-coital behaviors**—Youth pre-coital behaviors were measured using 11 items from an instrument developed for the Parents Matter! Program (Ball et al., 2004). Some items were drawn from a measure by Hansen, Paskett, and Carter (1999). The instrument assessed youths' sexual interests and activities with members of the opposite sex. Sample items range from, "Have you ever liked someone and wanted them to be your girlfriend/boyfriend?" to "Have you ever willingly touched a girl/boy's private parts, or ever let a girl/boy touch your private parts?" Questions were gated; youth were asked about advanced sexual activity only if they responded affirmatively to earlier questions. Response options were dichotomous (yes/no). Items were summed to provide a total score, with higher scores indicating more pre-coital behaviors.

**Parental monitoring/involvement**—Parents and youth completed the Inventory of Parental Involvement (IPI), 23-items assessing monitoring and involvement, which was adapted from the Inventory of Father Involvement (Hawkins et al., 2002). Qualitative work led to retention of 16 of the original 35 items and creation of six new items. Additional items assessed school involvement, provision of moral guidance, and parents' rewarding of their children, and these additions were based on qualitative feedback about the nature and pattern of parental involvement in this cultural context. An example item is, "How often do you attend events at your child's school?" Participants responded using a 3-point Likert scale: *1 = Never; 2 = Sometimes; 3 = Often*. Three items, asking about parental involvement, used a 4-point Likert scale: *1 = Never; 2 = Once or twice a week; 3 = About three times a week; 4 = Every day or almost every day*. Total scores were calculated by averaging the items, with higher scores indicating more parental involvement.

**Parent-child relationship quality**—Parents and youth completed the Interaction Behavior Questionnaire (IBQ; Prinz, Foster, Kent, & O'Leary, 1979), which assesses the quality of the relationship between caregivers and children. An example item is, "Your caregiver is easy to get along with." Responses to each of the 19 items were dichotomous, and scores were summed, with higher scores indicating more positive relationship quality. The IBQ has adequate psychometric properties in U.S. samples (Robin & Weiss, 1980) and a Black South African sample (Palin et al., 2009).

**Neighborhood quality**—Youth perceptions of neighborhood quality were assessed on two dimensions: safety and cohesion. To weight the two subscales equally, z-scores were computed and summed to create a total score.

**Neighborhood safety:** Youth completed a 6-item scale assessing perceptions of neighborhood safety. A true/false scale was used for all items, except one ("How safe do you feel your neighborhood is?"), which was measured using a scale ranging from *1 = Not safe* to *3 = Very safe*. This item was dichotomized by combining response options 2 and 3. Three items were based on a community disorder index (Cutrona, Russell, Hessling, Brown, & Murry, 2000). The remaining three items, which related to the community's street committees and the safety of open areas, were created for the parent study based on

qualitative work. Item responses were summed to create a total score, and higher scores indicated perceptions of safer neighborhoods.

**Neighborhood cohesion:** Neighborhood cohesion was measured using a 15-item scale (Cutrona et al., 2000), to which two items were added. This measure assessed youth perceptions of social ties, trust, and sense of community among neighbors. Response options were dichotomous for 16 items, and one item (“How easy is it for you to pick out people who are outsiders or who obviously don’t live in your neighborhood?”) was measured on a 3-point Likert-type scale ranging from *1 = Very Easy* to *3 = Not Easy*. This item was dichotomized by combining “very easy” and “sort of easy.” Responses were summed, and higher scores indicated greater perceived cohesion.

**Social support—**The Medical Outcomes Study Social Support Survey (MOS-SSS; Sherbourne & Stewart, 1991), a 28-item scale, assessed parents’ availability of social support. Participants provided information regarding their perceived availability of tangible support, emotional/informational support, affectionate support, and positive social interaction (e.g., “Would give me money if I needed it”). Participants responded using a 5-point Likert scale ranging from *1 = No one would do this* to *5 = Most of them would certainly do this*. Scores were summed across all items, with higher scores indicating more support. The instrument has good validity and reliability among U.S. samples (Sherbourne & Stewart, 1991) and a South African sample (Swartz, 2005).

## Data Analyses

Hypotheses were tested using two-step structural equation modeling (Anderson & Gerbing, 1988) with Robust Maximum Likelihood (MLR) estimation in Mplus 7.0 (Muthén, & Muthén, 2011). MLR estimation is suitable for small sample sizes and robust to non-normality (Chou, Bentler, & Satorra, 1991) and thus was appropriate for our outcome variables, some of which were not normally distributed. Two latent variables were created: youth sexual risk, which was comprised of sexual attitudes, intentions, and pre-coital behaviors; and positive parenting, comprised of youth- and parent-reported monitoring/involvement and relationship quality. A latent variable approach was selected because it affords the opportunity to examine an underlying theoretical construct while accounting for measurement error (Little, 2013). Demographic variables that were significantly correlated with the outcome variable, youth risk, and that were theoretically expected to relate to the study variables were included as covariates in each model. Model fit was assessed using several fit indices, including the chi square test of model fit, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and Comparative Fit Index (CFI).

## Results

Table 1 presents descriptive statistics for study variables. Youth reported moderate levels of neighborhood safety and relatively high levels of neighborhood cohesion. Parent- and youth-reported relationship quality and monitoring/involvement were largely consistent with one another. Overall, youths’ reports of sexual risk behaviors were low and youths’ reported



attitudes about sex were moderately protective. Youth intentions to engage in sexual behaviors were also generally low. For example, only 3% of girls and 8.1% of boys reported that they had thought about having sex. Similarly, approximately half (51.5%) of the sample reported engaging in 3 or fewer pre-coital behaviors, such as wanting a boyfriend/girlfriend (60%), hugging (58%) or holding hands with (63%) a boy/girl, or kissing a boy/girl (38%). Only 3% of youth ( $n=3$ ) reported that they have willingly touched a boy/girl's private parts or let a boy/girl touch their private parts.

Bivariate correlations largely reflected expected associations (see Table 2). As expected based on theory, youth age and gender were correlated with three of four outcome indicators. Thus, based on theory and empirical correlations, age and gender were included as covariates in the primary analyses. SES was not correlated with any variable and not included as a covariate.

### **Aim 1: Indirect effects of neighborhood quality on youth sexual risk via parenting**

**Measurement model**—All fit indices provided support for good model fit. All four indicators loaded on the latent factor of parenting with a factor loading of greater than .25. The second latent factor was youth sexual risk outcomes. Although this factor was hypothesized to be indicated by three variables (attitudes about sex, sex-related intentions, and pre-coital behaviors), attitudes about sex was not retained in the final model due to its low factor loading ( $\lambda=-.18$ , *n.s.*). Despite having only two indicators, the sexual risk latent factor was identified in the context of the broader measurement model (Kenny & Milan, 2012).

**Structural model**—The structural model was specified with paths from neighborhood quality to parenting and parenting to youth sexual risk. All variables were regressed on child age and gender. An indirect effect from neighborhood quality to youth sexual risk via parenting was also specified. Results of the structural model are displayed in Figure 1. All fit indices provided evidence for good model fit.<sup>1</sup> A Satorra-Bentler scaled chi-square difference test revealed that the fit of the structural model was not significantly worse than that of the measurement model,  $\chi^2_{M2-M1}(1) = 2.31$ , *n.s.*

Consistent with hypotheses, youths' perception of neighborhood quality was significantly positively related to parenting, such that perceptions of safe and cohesive neighborhoods predicted higher levels of positive parenting. Also as hypothesized, higher levels of positive parenting predicted lower sexual risk. The indirect effect of neighborhood quality on youth sexual risk via parenting was also significant,  $B=-.201$ ,  $p < .05$ . Specifically, higher levels of neighborhood quality predicted lower levels of youth sexual risk via positive parenting.

<sup>1</sup>The model was also analyzed with a direct path from neighborhood quality to youth sexual risk. A Satorra-Bentler scaled chi square difference test revealed that the direct path did not significantly improve model fit,  $\chi^2_{M2-M1}(1) = 2.31$ , *n.s.* Thus, the more parsimonious model with the indirect path was retained.

## Aim 2: Main and moderating effects of social support

**Measurement model**—As with the previous measurement model, latent factors were specified for parenting and youth sexual risk. Maternal perception of social support was added to this model (Figure 2), and model fit statistics indicated good model fit.

**Structural model: Main effect hypothesis**—A structural model was specified to estimate the main effects of social support. The following paths were specified: neighborhood quality predicting parenting, social support predicting parenting, and parenting predicting youth sexual risk (Figure 3). A Satorra-Bentler scaled chi-square difference test revealed that the structural model was not significantly worse-fitting than the measurement model,  $\chi^2_{M2-M1}(3) = 5.39, n.s.$ <sup>2</sup> The model indicated a main effect for social support, which was positively related to parenting. Parents who reported higher levels of support from family and friends also evidenced higher levels of positive parenting.

**Structural model: Buffering hypothesis**—To test the moderating effects of social support in the relation between neighborhood quality and parenting, a structural model was specified, with the addition of a social support by neighborhood quality interaction predicting parenting. Model fit statistics indicated poor model fit ( $\chi^2=233.575, df=33, p<.001$ ; RMSEA=.253 [90% CI .223, .284]; CFI=.362; SRMR=.133). A Satorra-Bentler scaled chi-square difference test revealed that this structural model was significantly worse-fitting than the measurement model ( $\chi^2_{M2-M1}(10) = 158.12, p < .05$ ). The social support by neighborhood quality interaction did not significantly predict parenting ( $\beta=-.009, n.s.$ ).

## Discussion

In our sample of Black South African families, contextual factors predicted positive parenting, and parenting in turn was strongly negatively related to youth sexual risk. Aim 1 findings were largely consistent with hypotheses and most of the previous literature (e.g., Odgers et al., 2012). Previous research inconsistent with this study's results (e.g., Armistead et al., 2002; Jones et al., 2005) has considered only one aspect of parenting, finding that monitoring is enhanced in the context of poor neighborhood quality. Examined as a latent construct that includes relationship quality, monitoring, and parental involvement, parenting appears to be compromised by neighborhood quality, pointing to the importance of understanding parenting and its contextual influences from a multidimensional approach. Consistent with a large body of U.S. literature and a small but growing body of literature in South Africa, the findings highlight the important role of parenting for youth sexual risk in this primarily Xhosa-speaking sample. Parents' monitoring of their children's behavior may limit youths' opportunities to engage in risky behaviors. Similarly, involvement accompanied by a warm, supportive relationship may promote parents' ability to influence youths' sex-related attitudes, intentions, and decisions. Further, as seen in U.S. research, neighborhood quality may "spill over" into parenting and, in turn, affect youth adjustment

<sup>2</sup>A simplified model for Aim 2 was also tested with sexual intentions as a manifest variable, rather than the sexual risk latent variable. This model demonstrated adequate model fit (CFI = .92, RMSEA = .07, SRMR = .06) and was not significantly worse fitting than the original model ( $\chi^2_{M2-M1}(7) = 7.20, n.s.$ ). The pattern of significance and effect sizes among the parameter estimates was also consistent with the original model.

(e.g., Kotchick et al., 2005; Odgers et al., 2012). Taken together, the results of Aim 1 highlight the importance of considering family-level processes, such as parenting, in the context of community environments.

Findings of Aim 2 were consistent with the main effects model of social support. Importantly, it is unlikely that the relation between social support and parenting was primarily due to common reporter variance, given that social support was reported by mothers, and the latent variable for parenting was largely driven by youth-reported parenting indicators. This finding provides strong evidence for incorporating strategies to build social support into parenting interventions.

The latent variable of youth sexual risk was largely consistent with previous research on precursors of sexual behavior (Protogerou et al., 2012), as sex-related intentions and behavior were highly correlated, and both loaded strongly onto the sexual risk factor. However, reported rates of pre-coital behaviors were lower than expected among South African youth (e.g., Eaton et al., 2003), a finding that may reflect youths' under-reporting due to the stigmatized nature of sexual behaviors. Alternatively, perhaps the developmental trajectory leading to engagement in risky sexual behaviors is more rapid than expected, such that older adolescents engage in these behaviors at a higher rate than the early adolescents represented in our sample. Additionally, perhaps the trajectory of pre-coital behaviors differs for South African youth not only in rate, but also in sequencing. Theories suggesting a linear trajectory of sexual intentions and behaviors (e.g., Jakobsen, 1997) have been developed and empirically tested within a Western, predominately White context. Black South African youth are embedded within a vastly different sociocultural context and thus may experience a different developmental sexual trajectory, which may be steeper, initiated later, or follow a different sequence in adolescence than among U.S. adolescents. Although a review study demonstrated that attitudes and intentions have strong predictive value for sexual behavior among youth in sub-Saharan Africa (Protogerou et al., 2012), it is possible that the sequence of sexual behaviors differs for these youth. Thus, the findings of the current study shed light on an understudied, high-risk population of youth who, during this stage of early adolescence, appear to be in the precontemplation stage of sexual behavior (Prochaska, Redding, & Evers, 2002).

### **Limitations and Directions for Future Research**

The current study should be interpreted in light of its limitations. According to convention of SEM (MacCallum, Browne, & Sugawara, 1996), the analyses were underpowered due to the small sample size, and the sample size may affect the adequacy of model fit indices. However, most of the predicted associations were detected despite the small sample, and the nonsignificant interaction term was very small and thus is unlikely to be detected as significant even with a larger sample. Another limitation is that youth attitudes about sex did not load onto the sexual risk factor, which may be due to the limited variability in this measure and the low overall base rate of risky sexual attitudes reported in this sample. This study is also limited by the relatively low factor loadings of the parent-reported indicators on the parenting factor. These low factor loadings may be, in part, due to common method variance, as many of the study variables were reported by youth. Furthermore, several of the

measures were developed in the U.S. and were not validated in a large South African sample. For example, the pre-coital behaviors scale was developed based on a sequence of behaviors that may not be consistent with the South African context; because questions were gated, it is difficult to know whether youth were engaging in more advanced sexual behaviors while not engaging in early precursors. Finally, the results of this study may not generalize beyond the specific population of primarily Xhosa-speaking, Black South Africans in the Cape Town area. Findings may be different among other ethnic groups in South Africa, among Black South Africans in other parts of the country, or among groups from other countries.

Future studies should examine these processes longitudinally as to characterize the role of parents as youth sexual risk develops into active sexual behaviors. Additionally, given that many of these variables are largely understudied in South Africa, qualitative work may deepen understanding of these processes and clarify future directions for research and intervention. For example, a qualitative exploration of parental social support may be useful in clarifying the function of this support for Black South African caregivers and their families. Further, given the prevalence of HIV among South Africans, an examination of whether and how parental HIV status influences these processes and, in turn, youth HIV risk is also an important next step.

Taking into account previous empirical research as well as relevant Black South African societal norms, the current study examined a culturally informed contextual model of parenting and youth sexual risk in order to promote an understanding of HIV prevention and risk reduction among these youth. Results of this study suggest that contextual variables play an important role for family processes and youth sexual risk and, in turn, risk of HIV infection. Despite different family and community environments between the U.S. and South Africa, parenting appears to be embedded within a community context and is highly influential for youth sexual risk in both settings, suggesting some cross-cultural consistency in the function of neighborhood quality, social support, and parenting. HIV prevention interventions should be informed by both family-and community-level processes, including parenting, neighborhood quality, and caregivers' social support. Holistic and culturally-informed approaches to intervention will enhance the effectiveness of these interventions in reducing HIV risk.

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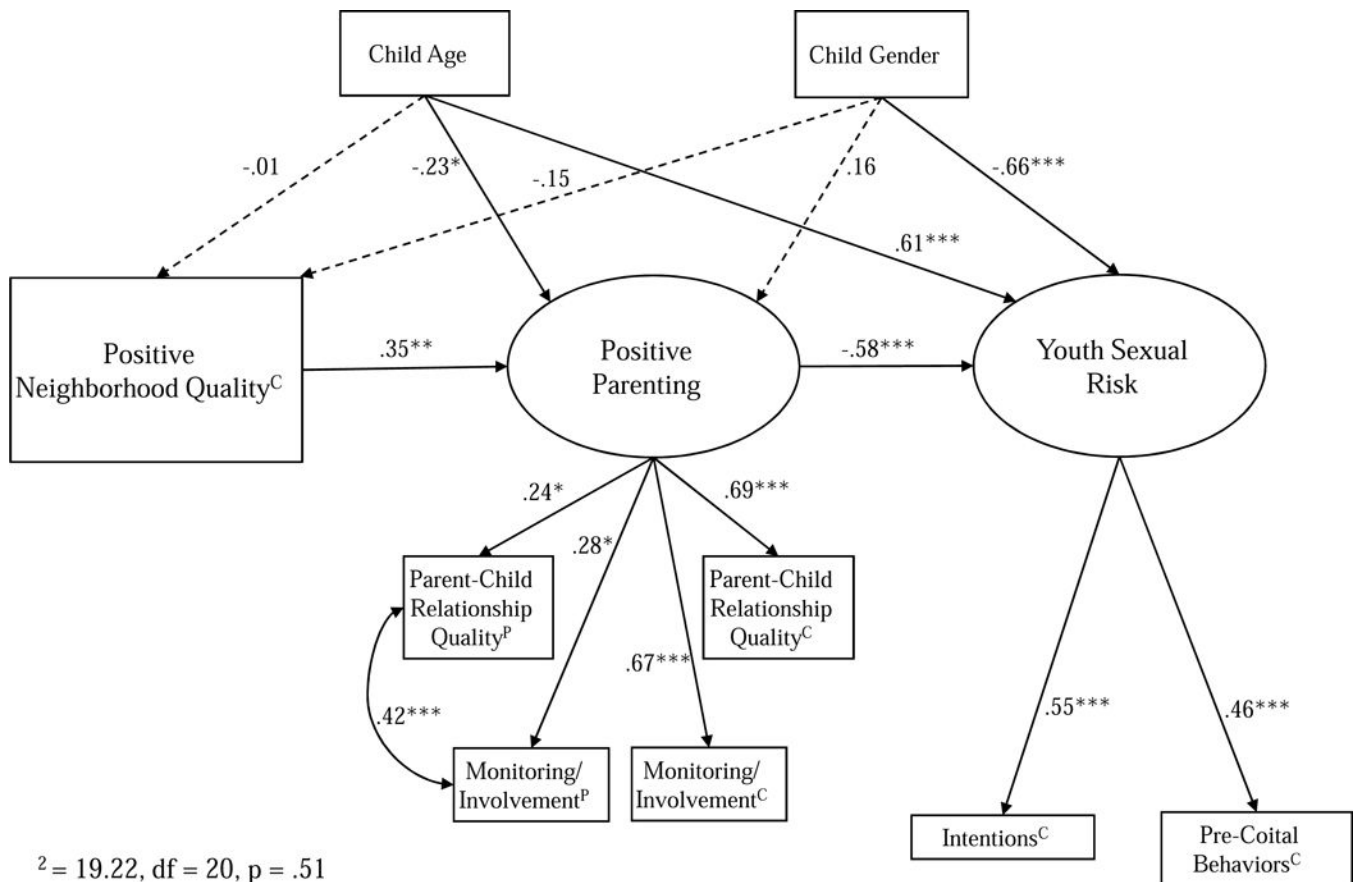
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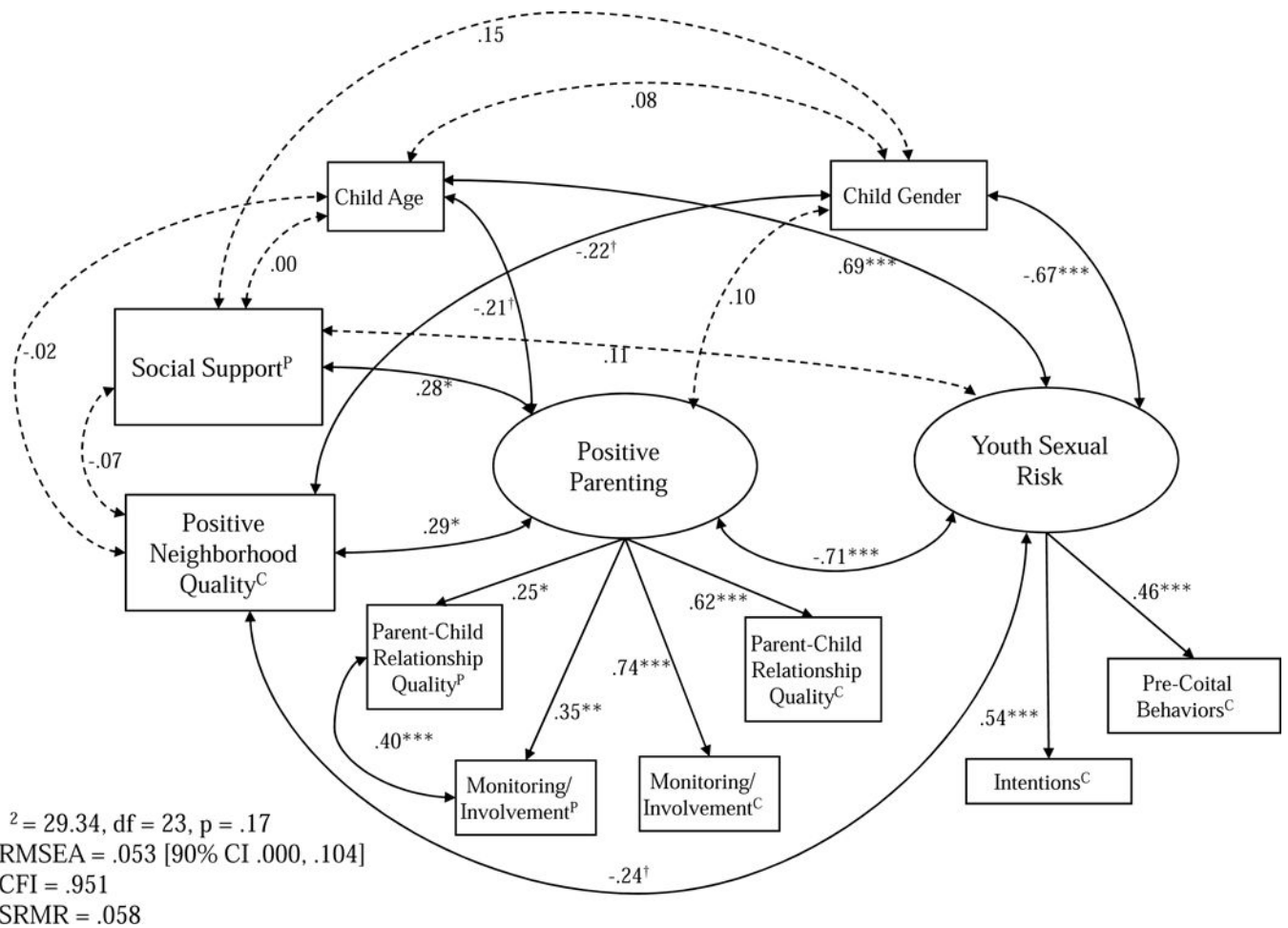
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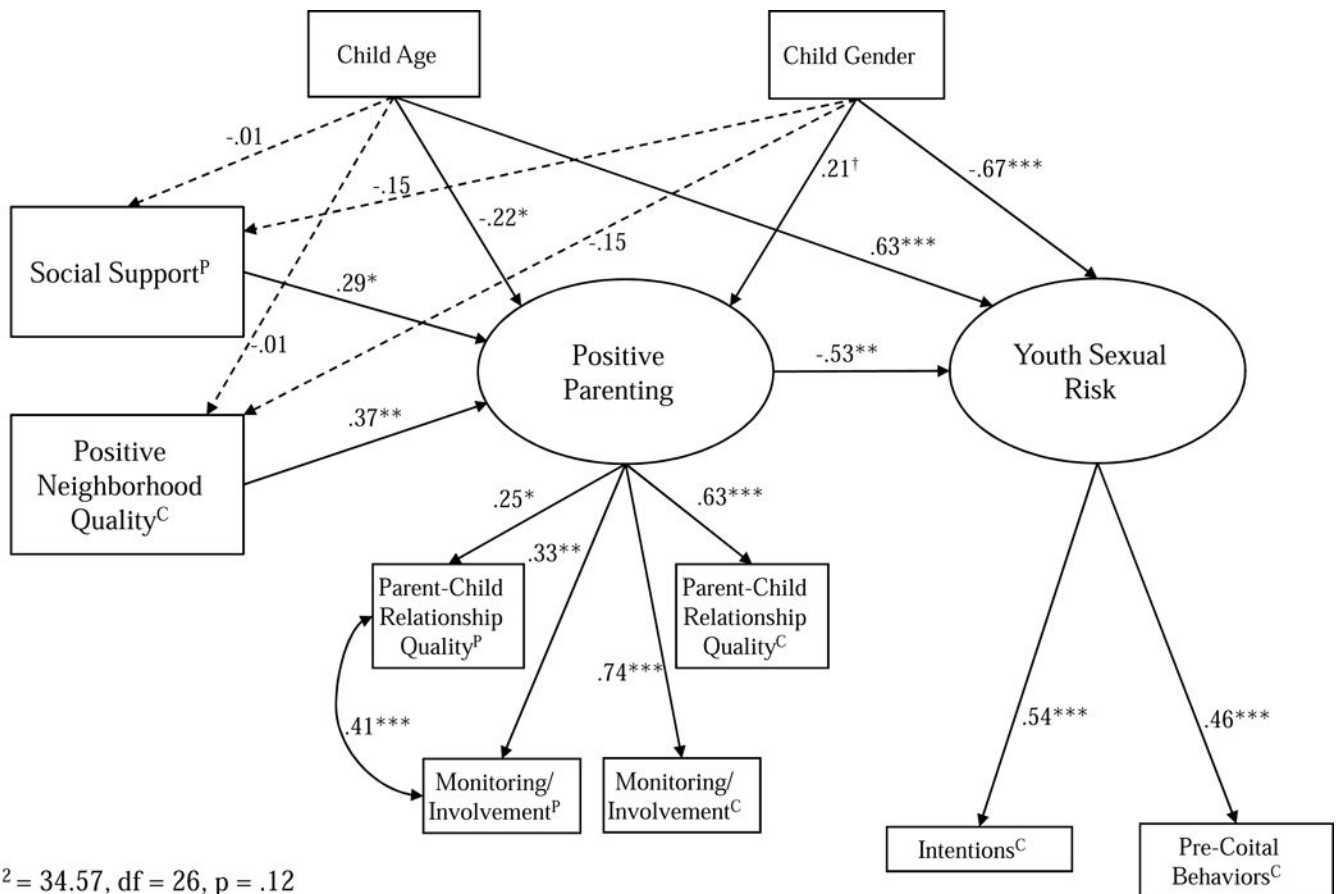


$\chi^2 = 19.22, df = 20, p = .51$   
 RMSEA = .000 [90% CI .000, .083]  
 CFI = 1.00  
 SRMR = .050

**Figure 1.** Structural model for Aim 1 estimating the indirect effects of neighborhood quality on youth sexual risk via parenting. *Note.*  $*p < .05$ ;  $**p < .01$ ;  $***p < .001$ . <sup>P</sup>Parent report; <sup>C</sup>Child report.



**Figure 2.** Measurement model for Aim 2 estimating covariance structure among all variables, including parental social support. *Note.* \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . <sup>P</sup>Parent report; <sup>C</sup>Child report.



$\chi^2 = 34.57, df = 26, p = .12$   
 RMSEA = .058 [90% CI .000, .104]  
 CFI = .934  
 SRMR = .064

**Figure 3.** Structural model for Aim 2 estimating main effects of social support on parenting. *Note.* \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . <sup>P</sup>Parent report; <sup>C</sup>Child report. Standardized parameter estimates presented.

**Table 1**

Descriptive Statistics for All Study Variables

	Percentage	Mean	Standard Deviation	Range		$\alpha$
				Min	Max	
Child Age		11.71	1.39	10	14	
Child Gender						
Male	47.5%					
Female	52.5%					
Parent Ethnicity						
Xhosa	83.8%					
Zulu	11.1%					
Sotho	3.0%					
Other	2.0%					
Parent Age		42.55	11.43	22	74	
Material Resources		0.46	0.50	0	1	
Neighborhood Safety <sup>C</sup>		3.72	1.70	0	6	.71
Neighborhood Cohesion <sup>C</sup>		11.57	3.10	3	16	.76
Parent-Child Relationship Quality <sup>P</sup>		13.02	3.94	2	19	.78*
Monitoring/Involvement <sup>P</sup>		2.48	0.25	1.83	3	.83
Parent-Child Relationship Quality <sup>C</sup>		12.90	2.97	2	18	.78*
Monitoring/Involvement <sup>C</sup>		2.36	0.35	1.18	3	.88
Attitudes about Sex <sup>C</sup>		0.77	0.27	0.19	1.13	.88
Sexual Intentions <sup>C</sup>		2.49	3.56	1	18	.84
Sexual Behaviors <sup>C</sup>		3.58	2.60	0	11	.79
Social Support <sup>P</sup>		89.80	27.65	34	140	.97

*Note.*

<sup>P</sup> Parent report;

<sup>C</sup> Child report.

\* Kuder-Richardson statistic.



Table 2

Bivariate Correlations among All Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Child Age	.											
2. Child Gender	.08	.										
3. Material Resources	.10	.16	.									
4. Neighborhood Safety <sup>C</sup>	-.05	-.07	-.03	.								
5. Neighborhood Cohesion <sup>C</sup>	.05	-.21 <sup>*</sup>	-.12	.45 <sup>***</sup>	.							
6. Relationship Quality <sup>P</sup>	.01	.04	.10	-.03	-.06	.						
7. Monitoring/Involvement <sup>P</sup>	-.18 <sup>†</sup>	.06	.01	.03	-.14	.45 <sup>***</sup>	.					
8. Relationship Quality <sup>C</sup>	-.16	.04	.12	.08	.25 <sup>*</sup>	.23 <sup>*</sup>	.18 <sup>†</sup>	.				
9. Monitoring/Involvement <sup>C</sup>	-.12	.08	.11	.25 <sup>*</sup>	.20 <sup>*</sup>	.16	.24 <sup>*</sup>	.47 <sup>***</sup>	.			
10. Attitudes about Sex <sup>C</sup>	.33 <sup>***</sup>	.27 <sup>**</sup>	.08	.08	.17	-.00	-.05	.18	.10	.		
11. Sexual Intentions <sup>C</sup>	.42 <sup>***</sup>	-.29 <sup>**</sup>	-.03	-.14	-.07	-.04	-.08	-.34 <sup>**</sup>	-.29 <sup>**</sup>	-.09	.	
12. Pre-Coital Behaviors <sup>C</sup>	.26 <sup>**</sup>	-.39 <sup>***</sup>	-.09	-.20 <sup>†</sup>	.05	-.10	-.21 <sup>*</sup>	-.18 <sup>†</sup>	-.15	-.10	.24 <sup>*</sup>	.
13. Social Support <sup>P</sup>	.01	-.14	.11	.05	-.11	.14	.33 <sup>**</sup>	.03	.21 <sup>*</sup>	-.08	.05	.08

Notes.

<sup>†</sup>  $p < .10$ ;

<sup>\*</sup>  $p < .05$ ;

<sup>\*\*</sup>  $p < .01$ ;

<sup>\*\*\*</sup>  $p < .001$ .

<sup>P</sup> Parent report;

<sup>C</sup> Child report. Male = 1, Female = 2.