Gender Differences in Sexual and Reproductive Health Protective and Risk Factors of Batswana Adolescents: Implications for Parent and Adolescent Interventions

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Gender differences in sexual and reproductive health protective and risk factors of Batswana adolescents: Implications for parent and adolescent interventions

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Abstract

Adolescents in sub-Saharan Africa and in Botswana in particular continue to bear the brunt of the HIV epidemic. This analysis assessed gender differences among theory-based sexual and reproductive health protective and risk factors in a cross-sectional sample of 228 Batswana adolescents. Incongruence between preferred and actual sources of sexual information and several important gender differences in parent-adolescent relationships, psychosocial influences, and adolescent sexual behaviors were identified. Parents were the fourth most common source of information about sex; yet, over three-quarters of adolescents preferred to have parents teach them about sex. Boys reported more positive relationships with their parents and girls reported more positive attitudes toward transactional sex. Both boys and girls reported similarly low levels of parental monitoring, parental communication, and parental responsiveness, all of which are important protective factors. These findings suggest interventions should address these gender differences and consider offering parallel interventions for adolescents and their parents in Botswana.

Keywords: gender differences, sexual and reproductive health, protective factors, risk factors, HIV, parent-adolescent relationships
Introduction

Adolescents face perilous choices in their transition through adolescence and the risks for HIV are magnified in sub-Saharan Africa where HIV prevalence is the highest globally. Among adolescents worldwide, 81% (1.7 million) of the adolescents living with HIV are in sub-Saharan Africa (Idele et al., 2014). Plausible explanations for why sub-Saharan Africa has been so devastated by HIV have included high rates of untreated sexually transmitted infections (STIs) that facilitate HIV acquisition and transmission, poor access to quality health care, insufficient or ineffective primary prevention programs, poverty, nosocomial transmission, high levels of migration, use of herbal vaginal drying agents, and lack of male circumcision (Lurie et al., 2003; Mah & Halperin, 2010; Piot, Greener, & Russell, 2007; St. Lawrence et al., 2006; Wasserheit, 1992; Williams et al., 2006).

Gender differences in HIV infection are also pronounced. Worldwide, in 2012 approximately two-thirds of new adolescent HIV infections were among girls (United Nations Children’s Fund, 2013) and in sub-Saharan Africa, one in four new HIV infections are among adolescent girls and young women (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2014). A variety of factors have been identified as major contributors to gender differences, such as gender-based violence, lack of access to education and sexual and reproductive health services, negative gender stereotypes, harmful gender norms, gender inequalities, poverty, and food insecurity (Dunkle et al., 2004; Jewkes, 2010; UNAIDS, 2016; Mutangadura, 2005).

Similar trends are seen in Botswana, the country with the third highest global HIV prevalence among adults in 2013 (UNAIDS, 2014). In Botswana, HIV prevalence is low for both boys and girls until age 15 when it begins to escalate rapidly, reaching 43.8% by ages 35-39 and prevalence among females is consistently greater than among males at all ages (Statistics
Botswana, 2014). An estimated 37-39% of Batswana adults between the ages of 15-49 are HIV-infected (Susman, 2004; Vardavas & Blower, 2007; Velayati et al., 2007) in contrast to the sub-Saharan average of 5% (Kilmarx, 2009).

Young Batswana continue to engage in the same risk behaviors (e.g., early sexual debut, unprotected sex, casual sex, and concurrent sex partners) that traditionally place adolescents at risk for STIs, early pregnancy, and now HIV (Carter et al., 2007; Jack et al., 2000; Ntsayaga et al., 2008; Tshweneagae, Seboni, & Seloilwe, 2009). While numerous adolescent behavioral HIV prevention interventions have been conducted and carefully evaluated in developed countries, few have been undertaken in Africa (Cowan & Pettifor, 2009). This analysis was part of a larger study to adapt and pilot test evidence-based interventions to prevent HIV among Batswana adolescents in response to the need for primary prevention interventions. Given the rapid increase in incidence beginning in adolescence and gender differences in HIV prevalence, this analysis assessed gender differences that would need to be addressed in an intervention.

Methods

Participants and Procedures

Participants who met the age inclusion criteria were recruited from lower and upper secondary schools and from both after-school and sports programs in Gaborone, Botswana. Informed consent from parents and caretakers (hereafter referred to as parents) and adolescents’ informed assent were completed prior to initiating data collection. Once the informed consent process was complete, participants started the anonymous audio self-administered computer interview (ACASI) survey on a notebook computer using audio headphones to preserve their privacy and ensure comprehension. The survey was administered in English, the language of instruction in Botswana’s schools. Data were collected during one period from March 2012 to
July 2012. Each participant was assigned a code number and only the code was entered into the ACASI survey; no personally identifying information was collected. After completion of the survey, the data were uploaded to DATSTAT in Seattle, WA and integrated into the master data file on a protected server. Once confirmation was received that the completed survey had been successfully uploaded, it was deleted from the notebook computer. Participants received a 60 pula honorarium (approximately US $5.00) for their participation and to offset their transportation costs, the set amount for participants in any university-sponsored research conducted by the University of Botswana. All study procedures were approved by Institutional Review Boards at the University of Botswana and Mississippi State University, where the senior investigator was employed at the time the research was conducted. The Botswana Ministry of Health & Wellness and Ministry of Education and Skills Development also approved the protocols.

Measures

The measures were grounded in the Social Cognitive Theory (Bandura, 1994) and Information-Motivation-Behavior Theory (Fisher, Fisher, Williams, & Malloy, 1994). Reliability and validity was established prior to their use in this research. The survey began with an orientation to familiarize participants with computer operation, then proceeded to gather basic demographic information before proceeding through the measures described below.

Demographic information. The survey collected information about age, gender, grade in school, number of people living in the home, and household resources.

Sources of sex education. Three items assessed adolescents’ preferences about sources for sexual education. Choosing among a list of response options (e.g., parent, aunt/uncle, priest/pastor, teacher), participants reported who they would go to first if they had a question
about sex (select one), from whom they had received most of their information about sex (select all that apply), and who they would most prefer to inform them about sex (select all that apply).

**Scales.** Seventeen brief scales were included in the ACASI survey. Direction of scoring was reversed for some items within each measure and recoded to ensure proper calculation. Five scales (acceptance of male and female gender violence, perceptions of the frequency of gender based violence and HIV testing community norms, and HIV stigma) were eliminated from the analyses when they yielded unacceptably low Cronbach’s alphas (.64, .51, .54, .51, and .09, respectively).

The Parent Child Relationship Quality Scale was adapted from a scale for parents or guardians (Jaccard, Dittus, & Gordon, 1996) and contained 8 items that were scored on a 5-point Likert scale from 0 (never) to 4 (all of the time). A sample item is “I am happy with how my parent or guardian and I get along.” In this sample, Cronbach’s alpha was .87. Higher scores reflect adolescents’ perceptions of better relationships with their parents.

The Parental Monitoring and Supervision Scale was adapted from the Family Adolescent Risk Behavior and Communication Study (FARBCS; Miller, Forehand, & Kotchik, 2000) and contained four items scored on the same 5-point Likert scale. A sample item is “How often does your parent or guardian know who you are with when you are not at home?” Cronbach’s alpha was .79 in this sample. Higher scores indicated that his or her parents were more attentive to the adolescent’s friends, activities, and use of free time.

Parental Use of Positive Reinforcement was adapted from the Positive Parenting subscale of the Alabama Parenting Scale (Shelton, Friek, & Wooten, 1996). This measure contained three items that assessed adolescents’ perceptions of the frequency with which parents responded to their positive behaviors with positive reinforcement. A sample item was “When you behave well
or do a good thing, how often does your parent/guardian praise you?” Items were scored on the
same Likert scale described above. In this study, Cronbach’s alpha for the measure was .77.
Higher scores reflected the adolescents’ perceptions of more frequent positive attention from
parents.

The Family Sexuality Communication Scale (Miller et al., 2000) was adapted from a
scale in the FARBCS described above for use with parents, reduced from 17 to 13 items, and
reworded to assess adolescents’ perceptions rather than parents’. The items assessed parental
communication about sexual development and sexuality. A sample item is “Does your parent
ever talk with you about how your body changes as you grow up?” Items were scored on the
same Likert scale described above. In this sample, Cronbach’s alpha for the measure was .93.
Higher scores reflected more frequent communication about sexual development and sexual
behavior between parents and their children.

Parental Responsiveness was also adapted from the FARCBS (Miller et al., 2000) to
assess adolescents’ perceptions whether parents would respond to their questions about sensitive
topics. In this sample, Kuder-Richardson 20 was .89. A sample item is “If I asked my
parent/guardian a question about a sex issue, they would try to answer my question with the
information I need.” The 14 items were rated as 0 (false) or 1 (true). Higher scores indicated
adolescents’ perceptions of greater parental responsiveness.

The Parental Attitudes toward Sexual Communication scale contained ten items adapted
from the FARBCS (Miller et al., 2000) to measure adolescents’ perceptions of parents’ comfort
when responding to questions about sexuality and sexual development. Items were measured as 0
(false) or 1 (true). A sample item is “My parent or guardian would rather have someone else talk
to me about sex topics” (item was reverse scored). In this sample, Kuder-Richardson 20 was .72
and higher scores indicated the adolescents’ perceptions of greater parental comfort responding to such questions.

Knowledge about HIV/AIDS (St. Lawrence, 1993) measured the adolescents’ accurate knowledge about HIV and contained 25 items measured on a 3-point scale (yes, no, I don’t know). This scale has been regularly updated and revised since initial publication. For each correct answer, one point was added to the participant’s score. In this sample, Kuder-Richardson 20 was .80. A sample item is “If a mosquito bites you after it bit someone with HIV, then it can infect you with HIV” (reverse scored). Higher scores reflected greater accurate knowledge about HIV and AIDS.

The Condom Attitude Scale (St. Lawrence et al., 1994) contains 24 items assessing attitudes toward condom use. In this sample, Cronbach’s alpha for the measure was .80. A sample item is “Using a condom takes away the pleasure.” Approximately one half of the items were reversed on the 7-point Likert response scale ranging from 0 (strongly disagree) to 6 (strongly agree). Higher scores reflect more positive attitudes toward using condoms.

Perceived Barriers to Condom Use Scale (Eldridge, St. Lawrence, Little, Shelby & Brasfield, 1994) assessed perceptions of interpersonal, social, financial, or emotional barriers to using condoms during sexual activity. The scale contains 28 items. In this sample, Cronbach’s alpha was .92 and a sample item is “I can’t afford to buy condoms because they cost too much.” Approximately half of the items were reverse scored on the five-point Likert-type scale that ranged from 1 (strongly disagree) and 5 (strongly agree). Higher scores reflected greater endorsement of barriers that would make condom use difficult.

Self-Efficacy Beliefs (adapted from Murphy, Multhauf, & Kalichman, 1995) contained four stories describing a realistic risky situation an adolescent might encounter. The stories were
adapted based on qualitative interviews with forty Batswana adolescents with equal representation of boys and girls (St. Lawrence et al., 2013). Following each story, the respondent answered four questions about their confidence that they could handle the situation safely. For example, the first item after each story was “How sure are you that you could refuse and walk away?” Each question was answered on a ten-point scale from 1 (not sure) to 10 (very sure). In this sample, Cronbach’s alpha = .91. Higher scores reflect greater self-efficacy beliefs.

This Attitudes toward Transactional Sex Scale was developed for use in this research based on the findings from qualitative interviews in which an unexpectedly high proportion of both boys and girls reported receiving sexual initiations from adults offering desirable goods in exchange for sex (St. Lawrence et al., 2013). A sample item is “It is okay to have sex with a sugar mommy or sugar daddy to get fashionable clothes.” This 24-item scale used a 6-point Likert scale ranging from 0 (strongly agree) to 5 (strongly disagree). In this sample, Cronbach’s alpha was .90. Higher scores reflected more positive acceptance of transactional sex.

Sexual Behavior Community Norms contained four items developed from the findings of the above qualitative study (St. Lawrence et al., 2013) that assessed adolescents’ perceptions that normative beliefs in the community supported risky sexual behavior. Participants rated their agreement using a 6-point Likert response format from 0 (strongly agree) to 5 (strongly disagree). A sample item is “Most men have other sexual partners even if they are married.” In this sample, Cronbach’s alpha was .72 for this scale.

Behaviors. For those who were sexually active (reported sexual intercourse), the final section of the survey asked about their age of first sex and sexual behavior for their lifetime and for the past two months that included number of male and number of female sex partners and frequency of condom-protected and unprotected vaginal, oral or anal intercourse events.
Data Analysis

The item-to-whole correlations and internal consistency (Cronbach’s alpha and Kuder-Richardson 20 for scales with Likert and binary items, respectively) of the measures were reviewed to ensure scales were robust. Person mean substitution was used to account for missing data. Descriptive analyses were conducted to summarize the measures and independent samples t-tests and chi-square tests examined gender differences. All analyses were conducted with SPSS 22.

Results

Description of Participants

The survey was completed by 228 adolescents (125 boys and 103 girls). Participants were, on average, 16.3 years old (SD = 1.7, range: 13 to 20 years). There was no age difference between boys (M = 16.2, SD = 1.6) and girls (M = 16.4, SD = 1.8). Nearly all (n = 206, 90.4%) participants were currently attending school. On average, there were 5.6 people living in participants’ households (SD = 3.3, range: 2 to 36 people). For one quarter (n=56, 24.6%) of the participants, one or both of their parents were deceased. As a proxy for household wealth, participants reported on the presence or absence of common household items (M = 7.0, SD = 2.5, range: 1 to 12 household items); 78.9% of participants reported having a flush toilet; 53.1%, a car; and 83.3%, a telephone in the household.

Sexual Education Preferences

Participants reported that the person they went to first with their questions about sex were a friend (36.0%), followed by a parent (24.6%; see Table 1). The most common source of information about sex was media (i.e., television, movies, books, or radio), reported by 61.0% of participants, followed by school (54.4%), friends (50.4%), and parents (41.2%). However, 75.9%
preferred to have parents teach them about sex. The second highest preference was for schools (62.2%). There was no difference in sexual education preferences by gender except that a higher proportion of girls (82.5%) preferred to have parents teach them about sex compared to boys (70.4%, p < .05) and a higher proportion of girls (9.7%) reported going to a teacher first if they had a question about sex compared to boys (3.2%, p < .05).

**Parent-Adolescent Relationships**

Both boys and girls perceived parental monitoring, parental use of positive reinforcement, parental communication about sexual development and sexuality, and their parents’ responsiveness to their questions about sensitive topics as low (see Table 2). Boys reported better relationships with their parents (p < .001), receiving more frequent positive attention from parents (p < .01), and perceiving their parents as more comfortable responding to their questions about sexuality and sexual development (p < .05) compared to girls.

**Psychosocial Mediators of Sexual Behavior**

Both boys and girls reported similar HIV knowledge, positive attitudes toward using condoms, barriers to using condoms, and self-efficacy; there were no differences by gender on these variables (see Table 2). Boys perceived greater normative beliefs in the community that supported engaging in risky sexual behavior (p < .001) compared to girls. Girls reported significantly more positive acceptance of transactional sex (p < .001) than did boys.

**Sexual Behaviors**

One-third (30.3%) of the sample reported having had intercourse and the average age at first sex was 15.1 (SD = 2.4). One-fifth (21.2%) of the participants reported being forced to have sex and proportions did not statistically differ by gender. A higher proportion of boys (37.6%)
reported having had intercourse compared to girls (21.4%, \( p < .01 \)). Boys reported a significantly younger age of first sex (M = 14.7, SD = 2.4) compared to girls (M = 16.1, SD = 2.1, \( p < .05 \)).

Of the boys who were sexually active, 12.8% reported ever having sex with a male partner; their average number of lifetime male partners was 3.4 (SD = 3.8, range = 1-10). On average, boys reported 2.2 lifetime female partners (SD = 1.8, range = 1-7). No girls reported same-sex sexual behavior and the average number of lifetime male partners was 1.9 (SD = 1.5, range = 1-7). Girls were more likely to report having a current sex partner (\( p < .05 \)) who was on average 7.2 years older (SD = 7.5, \( p < .001 \)).

**Discussion**

Within a sample of Batswana adolescents, this analysis explored gender differences among a variety of theory-based sexual and reproductive health protective and risk factors, including preferred and actual sources of sexual education, relationship and communication between parents and adolescents, psychosocial influences, and sexual behavior. Incongruence between preferred and actual sources of sexual information and several important gender differences were identified in regards to the parent-adolescent relationship, psychosocial influences, and adolescent sexual behaviors.

There appears to be a mismatch between adolescents’ preferred and actual sources of sexual information. Similar to other studies, media, school, and friends were the most common sources of sexual information (Bankole, Biddlecom, Singh, Guiella & Zulu, 2007; Bleakley, Hennessy, Fishbein, & Jordan, 2009; Meekers & Ahmed, 2000; Ward, 2003). Parents were the fourth most common source of information about sex; yet, over three-quarters of adolescents reported preferring that parents teach them about sex. While no gender differences were found between reported parental communication about sexual development and sexuality and parents’
responsiveness to their questions about sensitive topics between boys and girls, the overall level of perceived parental communication and responsiveness to questions about sexual development and sexuality were quite low. These findings are congruent with previous research about cultural norms in Botswana that noted Batswana tend to avoid discussions about sexuality between parent and child (Denbow & Thebe, 2006; Ntsayagae et al., 2008). Additional research has found that both parents and adolescents expressed a desire to be able to discuss sensitive topics with one another, but felt they do not have adequate knowledge or communication skills and were hesitant to do so (Fehringer et al., 2013; Nam et al., 2009; Seloilwe et al., 2013; St. Lawrence et al., 2013), which may explain why adolescents perceived low parental responsiveness to discussing sensitive issues.

Parental monitoring and use of positive reinforcement also were reported to be low by both boys and girls. A substantial amount of research demonstrates that parental behaviors influence adolescent sexual and reproductive health and can have a positive and protective impact that endures over time (Baker et al., 1999; Crosby, Terrell, & Pasternak, 2015; Li, Stanton, & Feigelman, 2000; Markham et al., 2009; Romer et al., 1999). Greater parental monitoring is associated with delayed sexual intercourse, greater condom use, and increased contraceptive use (DiClemente, Crosby, & Wingood, 2002; Dittus et al., 2015). An intervention targeting parents and caretakers that bolsters parental monitoring may be helpful in reducing adolescents’ sexual and reproductive risk.

One major gender difference that may increase girls’ risk of HIV and other STIs is that girls reported significantly greater acceptance of transactional sex in exchange for material goods, such as clothes, phones, money, or transport than did boys. These attitudes may motivate girls to engage in transactional sexual relationships with older adults, which also may explain
why girls compared to boys were more likely to report having an older current boyfriend. Such age disparate relationships may result in power imbalances around negotiating safer sex and increase the adolescents’ risk of HIV and other STIs (Dunkle et al., 2007; Eaton, Flisher, & Aarø, 2003; Seloilwe, 2005).

Another gender difference of note was the difference in reported same-sex sexual behaviors; no girls reported same-sex sexual behavior, but there was a 12.8% prevalence of lifetime same-sex sexual behavior among Batswana boys. Currently, the Botswana HIV/AIDS Impact Survey, Botswana’s surveillance system to assess HIV/AIDS incidence and prevalence, does not report same-sex sexual behavior and therefore, it is not possible to determine whether the prevalence among this sample from Gaborone is similar or different from national statistics. This estimate does suggest that further attention is needed to the increased risk for HIV among men who have sex with men.

There are several limitations that should be taken into account. These data are from a cross-sectional convenience sample of adolescents recruited through lower and upper secondary schools and after-school and sports programs in Gaborone and the results may not be representative of all Batswana adolescents. Results also are based on self-reported data. While our surveys were anonymous and administered by ACASI to promote disclosure, it is possible that social desirability bias influenced participants’ responses. Additionally, future research could recruit parent-adolescent dyads in order to understand parents’ perspectives on their relationship with their respective adolescent child which would help to contextualize the findings.

Despite these limitations, these findings have several important implications for the content and delivery of interventions. Multilevel interventions for both parents and for youth
may better address the multiple sexual and reproductive health risk and protective factors that impact adolescents in Botswana. In order to reduce adolescents’ hesitancy to talk with their parents about sexual matters, interventions could be delivered separately, in parallel, to adolescents and parents, with structured opportunities for them to come together. This approach would be highly congruent with the desires expressed by both parties (Selolwe et al., 2013).

Interventions for parents could focus on health education about HIV, sexual health, and reproductive development, improving accurate information provision, and enhancing communicating with children about sensitive topics. Parents could also benefit from interventions that increase their parental monitoring and their use of positive reinforcement, as both are currently perceived as occurring at low levels by adolescents although they have demonstrated a protective effect that lowers adolescents’ risk for HIV and other STIs. Given the adolescents’ perceptions that most had positive relationships with their parents, this intervention approach could further strengthen these already supportive relationships within the family.

For adolescents, the content of the interventions for boys and girls could be the same, but may be best delivered separately in gender-specific groups given different cultural norms for boys and girls. This approach would also allow for different pacing and emphasis for certain topics. For example, girls are often raised to be deferential and subordinate (Phaladze & Tlou, 2006), which may make it difficult for girls to insist on condom use or refuse sexual initiations. Therefore, while both interventions could focus on communication and condom use skills, girls may need more assistance in developing skills in assertion and boys could benefit from encouragement to build more equitable relationships.

Conclusions
This study suggests significant gender differences are present in Batswana adolescents’ sexual and reproductive health protective and risk factors that have implications for the delivery of interventions. While there were no gender differences in knowledge or attitudes about self-protection, there were significant differences in the perceptions of the parent-adolescent relationship, attitudes towards transactional sex, and perceptions of community norms about sexual behavior, all of which have meaningful intervention implications. Boys generally had more positive relationships with their parents from whom both boys and girls preferred to learn about sex although such discussions between parents and children is not a cultural norm. Interventions should address these gender differences and consider the potential value of parallel interventions for both adolescents and their parents, including embedding opportunities for them to come together and practice newly acquired communication skills with one another.
References


Table 1. Preferred and actual sources of sexual education

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<tr>
<th>Source</th>
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<th>Received most sex information</th>
<th>Should teach about sex</th>
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<td>Girls</td>
<td>Boys</td>
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<td>Parent</td>
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<td>19.4</td>
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<td>(16)</td>
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<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3)</td>
<td>(1.9)</td>
</tr>
</tbody>
</table>

Note. * Participants could select more than one option. N/A = not a response choice option for that question. * p < .05.
Table 2. Gender differences between Batswana boys and girls

<table>
<thead>
<tr>
<th>Scale</th>
<th>Boys (n=125)</th>
<th>Girls (n=103)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Range</td>
</tr>
<tr>
<td>Parent Child Relationship Quality Scale</td>
<td>24.3</td>
<td>5.9</td>
<td>7-32</td>
</tr>
<tr>
<td>Parental Monitoring and Supervision Scale</td>
<td>9.4</td>
<td>3.8</td>
<td>0-16</td>
</tr>
<tr>
<td>Parental Use of Positive Reinforcement</td>
<td>6.6</td>
<td>3.3</td>
<td>0-12</td>
</tr>
<tr>
<td>Family Sexuality Communication Scale</td>
<td>19.1</td>
<td>14.2</td>
<td>0-50</td>
</tr>
<tr>
<td>Parental Responsiveness</td>
<td>7.5</td>
<td>4.0</td>
<td>0-14</td>
</tr>
<tr>
<td>Parental Attitudes toward Sexual Communication</td>
<td>6.7</td>
<td>2.2</td>
<td>2-10</td>
</tr>
<tr>
<td>Knowledge about HIV/AIDS</td>
<td>16.0</td>
<td>4.4</td>
<td>4-24</td>
</tr>
<tr>
<td>Condom Attitudes Scale</td>
<td>105.8</td>
<td>19.2</td>
<td>60-143</td>
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<td>Perceived Barriers to Condom Use Scale</td>
<td>62.3</td>
<td>20.5</td>
<td>28-140</td>
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<tr>
<td>Self-Efficacy Beliefs</td>
<td>116.7</td>
<td>36.1</td>
<td>34-160</td>
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<tr>
<td>Attitudes toward Transactional Sex Scale</td>
<td>72.8</td>
<td>14.5</td>
<td>39-96</td>
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<tr>
<td>Sexual Behavior Community Norms</td>
<td>6.3</td>
<td>3.3</td>
<td>0-16</td>
</tr>
</tbody>
</table>

Note. M = Mean. SD = Standard Deviation. ***p < .001. **p < .01. *p < .05.