Sexual sensation-seeking and worry about sexually transmitted diseases (STD) and human immunodeficiency virus (HIV) infection among Spanish adolescents

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The target of this study is to assess the relationship between sexual sensation-seeking, worry about STD/HIV infection, and risky sexual behaviours among 182 adolescents aged 13-18 years. Results showed that participants who engaged in a wider range of potentially risky behaviours (e.g., sexual experience, higher number of sexual partners in last six months, and the last sexual contact with a casual partner) obtained higher sensation-seeking scores. It was also found that adolescents who engaged in sex with a casual partner in their last sexual contact reported being worried about STD/HIV infection, but adolescents having sex with a steady partner underestimated their risk of STD/HIV infection. These results support the idea that preventive programmes may benefit from including components aimed at teaching adolescents to satisfy their preferences for sexual sensation-seeking through novel and stimulating sexual behaviours involving minimum risk. Similarly, the need to include components aimed at making adolescents become realistically aware of the STD/HIV risk involved in unprotected intercourse with steady love partners is highlighted.
SSS) and HIV-risk behaviour (e.g., Chng & Getiga-Vargas, 2000; Kalichman et al., 1994; Kalichman & Rompa, 1995). This construct has been defined as «the propensity to attain optimal levels of sexual excitement and to engage in novel sexual experiences» (Kalichman et al., p. 387). The previous authors revised and adapted the Zuckerman’s Sensation Seeking Scale (Zuckerman, Eysenck, & Eysenck, 1978) to make it a sexually focused. It has been found considerable support for its psychometric characteristics as well as for its capacity to predict high-risk sexual behavior among various diverse samples of gay and bisexual men (e.g., Kalichman, Heckman, & Kelly, 1996; Kalichman et al.; Kalichman & Rompa; Parsons, Bimbi, & Halkiti, 2002). Although it was developed specifically for use with gay male samples, general character of its items has led to explore for its use among other populations at risk (e.g., racial/ethnic minorities). In contrast to the number of studies examining the relationship between SSS and sexual risk taking among adult samples, SSS is a noticeably absent construct in the adolescence empirical literature. Recently, several studies have showed the utility of the SSS measure in understanding risk of transmission for STDs and HIV among college samples (Gaither & Sellbom, 2003; Gullette & Lions, 2005; Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002). However, there exists only a study of SSS employing an adolescent sample (Spitalnick et al., 2007). The results of this study show that, among an at-risk sample of African-American adolescent females (ages 15-21), the greater endorsement of SSS relates to higher levels of sexual risk-taking behaviours (e.g. frequency of vaginal intercourse, number of sexual partners, and poorer condom use).

On other hand, the perceptions of risk about STD and HIV among adolescents need to be investigated. Available studies show contradictory results since they vary widely in the measurement of risk perception, with constructs such as perceived vulnerability, susceptibility, threat or worry being assessed by researchers. Recent findings support the superiority of the conceptualization of specific risk perception of STD and HIV instead of a generalized perception of risk (Crosby et al., 2001; Ellen et al., 2002; Poppen & Reisen, 1997; Reisen & Poppen, 1999). Crosby et al. designed a brief scale to assess the frequency of adolescents’ worry about STD infection as well as the frequency of worry about HIV (henceforth, STD/HIV worry). These authors found levels of STD/HIV worry were low among a high-risk sample of black adolescent females. Only a recent history of STD and different specific measures assessing partner-related difficulties to condom use were related with increased STD/HIV worry. To date, few studies exploring correlates of adolescents’ STD/HIV worry with HIV preventive behaviours have been conducted.

In sum, adolescence is a stage characterized by the tendency to experience novel and varied situations, an aspect that may motivate individuals to engage in risky behaviour even when they are aware of the potential dangers involved. The measurement of SSS as well as STD/HIV worry may offer noteworthy information to design optimal HIV prevention programmes that fit sexual-risk-taking individual characteristics. These measures are relatively new and there are few studies exploring them among adolescents. Besides, most of the available studies have been conducted with American samples. Therefore, the present study is novel in that it aims to employ the instruments measuring SSS and STD/HIV worry with the population of Spanish teenagers and explore its relationships with specific risky sexual behaviours in a sample of Spanish adolescents.

Method

Participants

One hundred eighty-two adolescents (90 males and 92 females) attending public secondary schools at the city of Granada (Spain) participated. Their ages ranged between 13 and 18 years (M=15.05; SD= 1.76). Consent was obtained from school authorities and written assent from each participant. The study was approved by the Ethics Committee of the University of Granada.

Measures

- Spanish adaptation of the «Sexual Sensation Seeking Scale» (Teva & Bermúdez, 2007). The original scale was created by Kalichman et al. (1994) to measure «the propensity to attain optimal levels of sexual excitement and to engage in novel sexual experiences» (p. 387). The most current version of the SSS scale was used (Kalichman & Rompa, 1995). It was an 11-item assessing sensation seeking specifically related to sexual interests and activities. Items were placed on a four-point rating format, with responses ranging from 1 («not at all like me») to 4 («very much like me»). Total scores were computed by calculating the mean endorsement (total score/number of items). The scale’s internal consistency for this study was satisfactory (α=.76).

- «Cuestionario VIH/SIDA y jóvenes de Andalucía. Factores asociados a la prevención de la transmisión sexual» [HIV/AIDS Questionnaire for youth from Andalucía. Predictors of sexual risky behaviours] (Bimbela & Jiménez, 1999). This questionnaire is composed of five scales: sexuality, HIV/AIDS, use of condoms, affective-sexual practices and demographic characteristics. All five scales display acceptable internal consistency (α>.60). Only some specific items of this questionnaire were used to measure various aspects of sexual risk-taking practices among the sample of adolescents studied. Participants were asked to indicate whether they had ever had some sexual experience (kisses, touching, masturbating, oral sex, vaginal intercourse or anal intercourse) (item dichotomously anchored «yes» and «no»). If they indicated «yes», then, participants were asked the number of different partners with whom they had engaged in any sexual behaviour (kisses, touching, masturbating, oral sex, vaginal intercourse or anal intercourse) during last six months. Following, participants were asked to indicate which sexual behaviours (kisses, touching, masturbating, oral sex, vaginal intercourse and anal intercourse) had practiced on last sexual contact, using a yes/no response format for each sexual behaviour. Next, participants were asked what kind of partner they had on last sexual contact («steady partner» or «casual partner»). Finally, they were asked whether they used a condom on last sexual contact («yes» or «no»). Each question was used as a variable in itself, and therefore, no total score was computed.

- Spanish adaptation of the «Adolescents’ Worry about STI and HIV Infection Scale» (Bermúdez, Gutiérrez-Martínez, Teva, & Buela-Casal, 2005). It was a scale created by Crosby et al. (2001). A four-item scale assessed the
frequency of adolescents’ worry that they were or would become infected and worry that their partners were or would become infected with an STD. An identical scale substituting only the term «AIDS virus» for «STD» assessed adolescents’ worry about HIV infection. All two scales used the same 4-point rating format, with responses ranking from 1 («never») to 4 («always»), thereby producing possible ranges of 4 to 16 for each subscale. The two scales displayed acceptable internal consistency (α=.75 and .85, respectively).

Results

Descriptive analyses of sexual risk-taking outcomes

69.2% of adolescents reported having ever had some sexual experience and 30.8% of adolescents reported never having had any sexual experience. Considering girls and boys separately, it was found that 72.8% of girls and 65.6% of boys reported having ever had some sexual experience. This gender difference was not reach statistical significance (χ² (1)= 1.12, p=.29).

Concerning their reports referred to the number of sexual partners in the last six months, 32.1% of adolescents declared having had some sexual behaviour with only one partner, 28.3% with two different partners and 39.3% with three or more partners. Regarding the reports referred to the last sexual contact, analyses revealed that 53.7% affirmed having his/her last contact with a steady partner and 46.3% with a casual partner. Among men, 56.9% had her last contact with a steady partner and 43.1% with a casual partner. Among men, half of them reported having his last contact with a steady partner and the other half with a casual partner. The gender differences on these percentages did not reach statistical significance (χ² (1)= 0.58, p=.45).

Table 1 shows the percentage of adolescents who reported having practiced some of the six assessed sexual behaviours on last sexual contact. Again, distributions of these percentages did not vary by gender. As the Table 1 shows, the more frequent behaviours among the participants were practices not involving penetration such as kisses and touching.

Table 2 presents the reports of adolescents regarding the use of condom on last sexual contact involving penetration. These reports have been differentiated on the basis of the kind of sexual behaviour practiced (vaginal intercourse and anal intercourse).

As the Table 2 shows, 21.4% of women and 7.7% of men reported having practiced vaginal intercourse without using a condom on their last sexual contact. Although a trend for the women to report less use of condoms in vaginal intercourse was found, gender differences did not reach statistical significant, 6χ² (1)= 0.97, p=.33. On other hand, the data in the Table 2 referred to the 100.0% of adolescents reported having engaged in unprotected anal intercourse must be cautiously taken since only data of one adolescent is available. Therefore, the only conclusion that may draw of this result is referred to the low frequency of anal intercourse among the surveyed adolescents.

SSS and sexual risk-taking outcomes

The scores on the SSS scale ranged between 0.82 and 3.27 (M=1.55; SD= 0.48). Analysis of variance revealed that these scores did vary by gender, F (1, 176)= 28.86, p<.001. Male participants (M= 1.74; SD= 0.52) scored significantly higher than women (M= 1.38; SD= 0.37). As a result, we considered the gender effect on the remainder of the analyses concerning SSS scores.

We next examine relationship between the SSS scores and the sexual risk-taking behaviour measures. First, it was found that adolescents who had ever had some sexual experience (M= 1.62; SD= 0.48) scored significantly higher on SSS scale than adolescents who reported never having had any sexual experience (M= 1.36; SD= 0.42), F (1, 174)= 11.58; p<.001 (the effects involving the interaction of gender variable did not reach statistical
significance, \( F (1, 174)=0.01; p=.92 \). Besides, analyses revealed that those who had higher SSS scores reported higher number of sexual partners during last six months \((r=.19, p<.01)\). Regarding measures of last sexual contact, it was found that those who had engaged with a casual partner \((M=1.73; SD=0.48)\) scored significantly higher on SSS than adolescents who engaged with a steady partner \((M=1.5; SD=0.44)\), \( F (1, 119)=7.27; p<.01 \). Again, the interaction of gender variable on these analysis did not reach statistical significance, \( F (1, 119)=0.01; p=.91 \). However, no differences on SSS scores were found among adolescents who reported using a condom on last sexual contact involving penetration \((M=1.87; SD=0.51)\) and adolescents who reported not using it \((M=1.83; SD=0.56)\), \( F (1, 26)=0.01, p=.91 \).

**STD/HIV worry and sexual risk-taking outcomes**

STD/HIV worry scores ranged between 4 and 16 \((M=7.26, SD=3.09; M=7.19, SD=3.29, \text{ respectively})\). Analysis of variance revealed that neither scores did vary by gender, \( F (1, 176)=0.19, p=.66\); \( F (1, 179)=0.20, p=.66 \), respectively.

STD/HIV worry scores were analysed in function of the adolescents’ sexual practices. As the Table 3 shows, the adolescents who had ever had some sexual experience did not differ significantly on STD/HIV worry scores of those who reported never having had any sexual experience. However, analyses revealed that those who reported higher number of sexual partners during last six months showed higher STD/HIV worry scores \((r=.26, p<.01; r=.22, p<.01, \text{ respectively})\). Regarding measures of last sexual contact, it was found that the adolescents who reported that they had engaged with a casual partner scored significantly higher on STD/HIV worry scales than adolescents who engaged with a steady partner (see Table 3). Finally, the analysis of data from the participants who had practiced sex with penetration on last contact showed that there were no statistically significant differences on STD/HIV worry scores among adolescents using a condom and not using it.

**SSS and STD/HIV worry**

Finally, bivariate correlations between SSS scores and STD/HIV worry scores were calculated. Analyses revealed that adolescents scoring high on SSS scale had as well high scores in both the STD worry scale \((r=.21, p<.01)\) and the HIV worry scale \((r=.15, p<.05)\).

**Discussion**

In spite of the early age \((M=15.05 \text{ yrs})\) of the adolescents studied, a large percentage of them \((69.2\%)\) reported having ever had some sexual experience. Similarly, a large percentage of them \((67.9\%)\) reported having engaged with more than one sexual partner on last six months. Likewise, the reports referred to last sexual contact revealed that sex with occasional partners is a frequent practice among the Spanish adolescent participants \((43.1\% \text{ of women and } 50\% \text{ of men})\). These data are congruent with other wider HIV epidemic reports that show that unmarried girls and boys are sexually active before the age of 15 in many countries (UNICEF, UNAIDS, & WHO, 2002).

Although the more frequent sexual behaviours reported by adolescent participants in the present study were kisses and touching, condom use data among the small number of adolescents who practiced penetration result highly concerning. For example, 21.4\% of women and 7.7\% of men reported not using a condom on last vaginal intercourse. It is remarkable the observed trend for the female participants to report higher involvement in risky sexual behaviours, which is also consistent with other reports (e.g., Ballester & Gil, 2006; UNAIDS, 2005). It seems that, although early in the course of the AIDS epidemic men had significantly more risky behaviours than the women did, nowadays, evolution of social norms has lead to equalize the risks between males and females (García-Vega, Fernández, & Rico, 2005; Navarro-Pertusa, Barberá, & Reig, 2003), being even now females who are thought to be at higher risk for STD and HIV infection. The implications of these findings for the design of HIV prevention interventions are obvious. Thus, an increasing interest on the prevention strategies that give the control of the protection to the women, as the female condom, is emerging (Lameiras-Fernández, Núñez-Mangana, Rodríguez-Castro, Bretón-López, & Agudelo, 2007).

This study represents the second one that provides results, although preliminary, that show the relationship between SSS and some potentially risk sexual practices. Thus, the Spanish adolescent participants who engaged in a wider range of risk-taking behaviours (e.g., sexual experience, higher number of sexual partners on last six months, and last sexual contact with a casual partner) showed higher SSS scores. These results are, in part, consistent with the adult literature (e.g., Kalichman et al., 1996; Kalichman & Rompa, 1995; Parsons et al., 2002) and with the study by Spitalnick et al. (2007), the first STD/HIV

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<th>Sexual practices</th>
<th>STD Worry</th>
<th>HIV Worry</th>
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<td>M</td>
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investigation of SSS employing an adolescent sample. Results of present study support the Spitalnick et al.’s findings and extend the utility of SSS scale to predict certain STD/HIV-risk behaviours among a Spanish adolescent sample. However, a result that differs from that study is that SSS was not associated with poorer condom use among the Spanish adolescent participants. These inconsistent findings may be related with the differences between the samples participating in each study. Participants in the Spitalnick et al.’s study were African-American females (ages 15-21) seeking reproductive/sexual health services and reporting vaginal intercourse in the previous 60 days. Participants in the current study were boys and girls (ages 13-18) recruited in their schools and no eligibility criteria regarding their sexual history were established. In fact, a very small number of participants had practiced sex involving penetration on last sexual contact.

Findings of current study referred to the lack of association between SSS and condom use among a very young sample of adolescents, although preliminary, suggest some hypotheses to be explored in future studies. Because of the early age of the participants, their preferences for SSS (not definitively conformed yet) might be related with sexual arousal sources less-risky that unprotected sex (e.g., protected intercourses with novelty partners, protected intercourses in uncommon places, fantasies, etc.) This assumption would fit reasonably well predictions derived of Zuckerman’s theory about sensation seeking trait since it establishes that risk taking is a correlate of sensation seeking trait but is not a primary motive in behaviour (Zuckerman, 1979, 1994). Thus, if future studies demonstrate that SSS is not associated with poorer condom use among young people, clinicians (e.g., psychologists, school counsellors, social workers) might considerer focusing interventions on teaching adolescents to satisfy their preferences for sexual stimulation through a variety of exciting behaviours with minimal risk to them (Roberti, 2004). In other words, if adolescents learn a wide repertoire of non-risky stimulating sexual activities that increase the perceived novelty, sensations and excitement, it will prevent them to engage in the future in unprotected sexual intercourses or other high risky activities (Kalichman et al., 1994). Further progress in this line of inquiry will require additional research that includes methodology (e.g. longitudinal design) that permits excavating the factors (e.g., developmental, social, familial, etc.) that contribute to adolescents wanting to sexual sensation seek and how educating people on alternative, less risky but novel, sexual behaviours.

Concerning levels of STD/HIV worry, the more remarkable findings were that the adolescent participants having sex with a casual partner reported being worried about STD/HIV infection but participants having sex with a steady partner believed they are at less risk. Again, this is consistent with previous studies that have shown that the issues of affect and trusting a partner are associated with poorer condom use among adolescents with a preference for SSS that are minimally risky but are equally stimulating, as a mean to prevent the development of other extremely high-risk behaviours later life.

This study is not without limitations. First, although characteristics of our sample match those of youth populations currently at risk for HIV infection, this study used a convenience sample that cannot be considered representative. Also, methodological concerns are the reliability of self-reported measures and the correlational nature of the study. Although this methodology has been the standard practice in this area of research and previous studies have established the validity and reliability of self-reported sexual behavior (e.g., Gibson, Hudes, & Donovan, 1999; Ochs & Binik, 1999), constraints of this kind of measures and designs should not be overlooked. Additionally, risky sex in this study included factors such as sexual experience, number of sexual partners or kind of partner. Despite their common use in research as indicators of risky sex (especially among very young people), these behaviours by themselves do not inherently represent risky sex, particularly if precautions are taken to reduce the risk associated with the transmission of STD/HIV (e.g. appropriate condom use).

In sum, our findings justify further research with larger representative samples as well as additional studies including methodology (e.g. longitudinal designs, precise measures) that permits the careful examination of additional psychological variables related to the adoption of protective sexual behaviours among adolescents (Bretón-López & Buela-Casal, 2005, 2006). Complementary, we would particularly encourage randomized controlled trial designs that demonstrate which specific strategies can account for the reductions in sexual risk behaviors. It will likely lead to the development of effective STD/HIV prevention interventions tailored for diverse adolescent populations, particularly high-risk youth.
Referencias

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