

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.

Búsqueda de sensaciones y preocupación por las Enfermedades de Transmisión Sexual y VIH en adolescentes españoles. El objetivo de este estudio fue evaluar la relación entre la búsqueda de sensaciones sexuales, la preocupación por la infección de ETS/VIH y algunas conductas sexuales de riesgo entre 182 adolescentes con edades comprendidas entre 13 y 18 años. Los resultados mostraron que los adolescentes que informaron de la realización de más conductas sexuales que potencialmente implicaban riesgo (por ejemplo, experiencia sexual, mayor número de parejas sexuales en los últimos seis meses, y última pareja sexual de tipo ocasional) obtuvieron puntuaciones más altas en búsqueda de sensaciones sexuales. Además, los adolescentes que habían estado con una pareja ocasional en el último contacto sexual informaron mayor preocupación por las ETS y el VIH que los adolescentes con pareja estable. Los resultados sugieren que el impacto de los programas de prevención podría mejorar incluyendo estrategias para que los adolescentes aprendan a satisfacer sus preferencias por la búsqueda de sensaciones sexuales a través de comportamientos sexuales novedosos y estimulantes que impliquen un riesgo mínimo. Se resalta también la necesidad de sensibilizar a los jóvenes acerca del riesgo que implican las relaciones sexuales desprotegidas con sucesivas parejas estables.

The growing spread of HIV/AIDS puts the epidemic among the highest priority areas of research. If the example of an western country like Spain is taken, a worrying picture is obtained. Spain is the country with the highest prevalence rate of HIV/AIDS in Occidental Europe (Bermúdez & Teva-Álvarez, 2003). The mean prevalence of AIDS per 1,000 habitants was 1.61 finishing 2003 (Bermúdez & Teva-Álvarez, 2004).

The 15-to-49-year-old age people are the group with the highest HIV risk since they represent more than half of the new infections (UNAIDS, 2004; UNICEF, UNAIDS & WHO, 2002). Estimates

are that in 2004 each day 14,000 individuals were infected with HIV, of whom 12,000 were aged 15-49 years. Fifty per cent of these 12,000 new infections occurred in young aged 15-24 years and almost an a half of them were women (UNAIDS). It seems clear that youth are a population at increased risk of HIV infection.

Faced with the magnitude of these problems, prevention among adolescents has become a priority in the fight against HIV. Innovative research is exploring the hypothesis that HIV intervention tailored for diverse adolescent populations may optimize the HIV prevention effectiveness (DiClemente & Wingood, 2003; DiClemente et al., 2004; Gaither & Sellbom, 2003). Therefore, a large interest to explore the association between risky sex and personality tendencies or individual characteristics related to risk-taking behaviour (e.g., sensation seeking, impulsivity, etc.) has arisen.

Several studies over the past decade have examined the relationship between the sexual sensation seeking (henceforth,

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, & Halkitis, 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 ($\alpha=.76$).
- «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 ($\alpha>.60$). 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 «not»). 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 «not»). 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, & Buena-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 ($\alpha = .75$ and $.85$, respectively).

Design

It is an «ex post facto» prospective study, according to the Montero and Leon's (2005) classification.

Procedure

First, two of the researchers had an interview with the respective chairs of the counselling departments of two public secondary schools at the city of Granada (Spain). The researchers explained to each counsellor the purpose of the study, showed the questionnaires to apply to the adolescents and requested to take part in the study. Both agreed to collaborate in the study. They decided the time, the date and the class when questionnaires would be applied. Questionnaires were administered in the classroom in the presence of two of the researchers and the class teacher. Researchers followed a standardized protocol in giving instructions to students and in answering questions about individual items. Student participation was voluntary; however, no student refused to participate in the research. Verbal and written instructions reminded students of the importance of giving honest answers, not writing their names on the questionnaire to maintain confidentiality, and not talking during questionnaire completion. Completion of the measures took 50–60 minutes.

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 statistically significant ($\chi^2 (1) = 1.12, p = .29$).

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 women, 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 ($\chi^2 (1) = 0.58, p = .45$).

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 significance, $\chi^2 (1) = 0.97, p = .33$. 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

Table 1
Percentage of adolescents who reported having practiced different sexual behaviours on last sexual contact

	Sexual behaviour					
	Kisses	Touching	Masturbation	Oral sex	Vaginal intercourse	Anal intercourse
Men	96.3	78.8	30.8	29.4	25.5	1.7
Women	97.0	80.6	27.7	18.2	21.2	0

Table 2
Percentage of adolescents who reported having used condom on last sexual contact involving penetration, by differentiating kind of sexual behaviour

	Sexual behaviour			
	Vaginal intercourse		Anal intercourse	
	Protected	Unprotected	Protected	Unprotected
Men	92.3	7.7	0.0	100.0
Women	78.6	21.4	–	–

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 adolescents who reported that they 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 ($M = 7.26$, $SD = 3.09$; $M = 7.19$, $SD = 3.29$, 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 ($r = .26$, $p < .01$; $r = .22$, $p < .01$, 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 ($M = 15.05$ 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% of women and 50% 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 led 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

Table 3
Means (M), standard deviations (SD) and ANOVA results in function of sexual practices for STD worry scores and HIV worry scores

Sexual practices		STD Worry				HIV Worry			
		M	SD	$F_{(g,1)}$	p	M	SD	$F_{(g,1)}$	p
Sexual experience	Not	6.89	3.27	$F_{(1,176)}=1.18$	.28	6.98	3.44	$F_{(1,179)}=0.33$	.57
	Yes	7.44	3.00			7.29	3.23		
Kind of partner, last contact	Steady	6.78	2.60	$F_{(1,118)}=6.22$	.01	6.57	2.83	$F_{(1,119)}=5.55$	.02
	Casual	8.13	3.30			7.93	3.51		
Condom use, last contact with penetration	Protected	7.61	3.55	$F_{(1,26)}=0.25$	.62	7.78	3.84	$F_{(1,26)}=0.01$	.92
	Unprotected	6.80	1.09			7.60	3.28		

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 than 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 consider 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 eroticism, 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 showed that the issues of affect and trusting a partner are very important to the teens (Alcalá, Camacho, Giner, Giner, & Ibáñez, 2006; Lameiras, Rodríguez, & Dafonte, 2002; Miras, 2001; Navarro-Pertusa et al., 2003; Navarro-Pertusa, Reig-Ferrer, Barberá, & Ferrer, 2006). The mere fact that a young is with a steady partner seems to be perceived as making the experience a safer sexual encounter. The numerous HIV-education campaigns of recent years seem to have brought the high risk of having sex with novelty partners to the attention of adolescents. Since the

specialised literature would support that the personal acceptance of the STD/HIV worry may be a facilitator for protected sex (e.g., Ellen et al., 2002; Reisen & Poppen, 1999), we would encourage to continue the preventive work in the same direction but emphasizing interventions addressed to make adolescents realistically aware of risk involved in unprotected intercourses not only with a casual partner, but also with a steady partner. Further research on this direction may offer promising implications since the sexual culture of unprotected sex in steady love relationship appears as one of the explanations of the increase of HIV infection via unprotected heterosexual intercourse throughout North America and Western and Central Europe (UNAIDS, 2005).

Other finding was that STD/HIV worry scores correlate positively with scores on SSS. Again, this result is on favour of demystifying that the trait of SSS involves necessarily optimistic bias and absolute insensitivity to the risk (Roberti, 2004). Participants who scored high in SSS would have more sexual contacts with casual partners but they would be conscious of the threat that this kind of practices involves since the partner's sexual history is unknown. Nevertheless, the levels of association between the constructs of interest are small and should be taken as preliminary. As said, it is clearly needed to conduct future studies that assess the effectiveness of teaching alternative sexual arousal sources 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 & Buéla-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.

References

- Alcalá, V., Camacho, M., Giner, D., Giner, J., & Ibáñez, E. (2006). Afectos y género. *Psicothema*, 18, 143-148.
- Ballester, R., & Gil, M.D. (2006). La sexualidad en niños de 9 a 14 años. *Psicothema*, 18, 25-30.
- Bermúdez, M.P., Gutiérrez-Martínez, O., Teva, I., & Buéla-Casal, G. (2005). *Adaptación castellana de la Adolescents' Worry about STI and HIV Infection Scale*. Manuscript non published.
- Bermúdez, M.P., & Teva-Álvarez, I. (2003). Situación actual del VIH/SIDA en Europa: análisis de las diferencias entre países. *International Journal of Clinical and Health Psychology*, 3, 89-106.
- Bermúdez, M.P., & Teva-Álvarez, I. (2004). Situación actual del SIDA en España: análisis de las diferencias entre comunidades autónomas. *International Journal of Clinical and Health Psychology*, 4, 553-570.
- Bimbela, J.L., & Jiménez, J.M. (1999). Cuestionario VIH/SIDA y jóvenes de Andalucía. Factores asociados a la prevención de la transmisión sexual. In J.L. Bimbela. *Juventud y sida: análisis de conocimientos, actitudes y prácticas en Andalucía* (pp. 267-292). Unpublished doctoral dissertation, University of Barcelona, Spain.
- Bretón-López, J., & Buéla-Casal, G. (2005). Evaluación del efecto de las campañas publicitarias de prevención de VIH/SIDA en adolescentes. *Psicothema*, 17, 590-596.
- Bretón-López, J., & Buéla-Casal, G. (2006). Cuestionario para la evaluación del impacto de campañas publicitarias sobre prevención del VIH/SIDA. *Psicothema*, 18, 557-564.
- Chng, C.L., & Geliga-Vargas, J. (2000). Ethnic identity, gay identity, sexual sensation seeking and HIV risk-taking among multiethnic men who have sex with men. *AIDS Education and Prevention*, 12, 326-339.
- Crosby, R., DiClemente, R.J., Wingood, G.M., Sionéan, C., Harrington, K., Davies, S.L. et al. (2001). Psychosocial correlates of adolescents' worry about STD versus HIV infection. Similarities and differences. *Sexually Transmitted Diseases*, 28, 208-213.
- DiClemente, R.J., & Wingood, G.M. (2003). HIV prevention for adolescents: Windows of opportunity for optimizing intervention effectiveness. *Archive of Pediatric Adolescence Medicine*, 157, 319-320.
- DiClemente, R.J., Wingood, G.M., Harrington, K.F., Lang, D.L., Davies, S.L., & Hook, E.W. (2004). Efficacy of an HIV prevention intervention for African American adolescent girls. *The Journal of the American Medical Association*, 292, 171-179.
- Ellen, J.M., Adler, N., Gurvey, J.E., Dunlop, M.B.V., Millstein, S.G., & Tschann, J. (2002). Improving predictions of condom behavioural intentions with partner-specific measures of risk perception. *Journal of Applied Social Psychology*, 32, 648-663.
- Gaither, G., & Sellbom, M. (2003). The sexual sensation seeking scale: Reliability and validity within a heterosexual college student sample. *Journal of Personality Assessment*, 81, 157-167.
- García-Vega, E., Fernández, P., & Rico, A. (2005). Género y sexo como variables moduladoras del comportamiento sexual en jóvenes universitarios. *Psicothema*, 17, 49-56.
- Gibson, D.R., Hudes, E.S., & Donovan, D. (1999). Estimating and correcting for response bias in self-reported HIV risk behavior. *The Journal of Sex Research*, 36, 96-101.
- Gullette, D.L., & Lyons, M.A. (2005). Sexual sensation seeking, compulsivity and HIV risk behaviours in college students. *Journal of Community Health Nursing*, 22, 47-60.
- Kalichman, S.C., Heckman, T., & Kelly, J.A. (1996). Sensation seeking as an explanation for the association between substance use and HIV-related risky sexual behavior. *Archives of Sexual Behavior*, 25, 141-154.
- Kalichman, S.C., Johnson, J.R., Adair, V., Rompa, D., Multhaupt, K., & Kelly, J.A. (1994). Sexual sensation seeking: Scale development and predicting AIDS risk behaviour among homosexually active men. *Journal of Personality Assessment*, 62, 385-397.
- Kalichman, S.C., & Rompa, D. (1995). Sexual Sensation Seeking and Sexual Compulsivity Scales: Reliability, validity and predicting HIV risk behavior. *Journal of Personality Assessment*, 62, 385-397.
- Lameiras, M., Rodríguez, Y., & Dafonte, S. (2002). Evolución de la percepción de riesgo de la transmisión heterosexual del VIH en universitarios/as. *Psicothema*, 14, 255-261.
- Lameiras-Fernández, M., Núñez-Mangana, A., Rodríguez-Castro, Y., Bretón-López, J., & Agudelo, D. (2007). Conocimiento y viabilidad de uso del preservativo femenino en jóvenes universitarios españoles. *International Journal of Clinical and Health Psychology*, 7, 207-216.
- Mashegoane, S., Moalusi, K.P., Ngoepe, M.A., & Peltzer, K. (2002). Sexual sensation seeking and risky behaviour among South African university students. *Social Behavior and Personality*, 30, 475-484.
- Miras, F. (2001). Actitudes de los adolescentes ante las relaciones sexuales. *International Journal of Psychology and Psychological Therapy*, 1, 93-113.
- Montero, I., & León, O.G. (2005). Sistema de clasificación del método en los informes de investigación en Psicología. *International Journal of Clinical and Health Psychology*, 5, 115-127.
- Navarro-Pertusa, E., Barberá, E., & Reig, A. (2003). Diferencias de género en motivación sexual. *Psicothema*, 15, 395-400.
- Navarro-Pertusa, E., Reig-Ferrer, A., Barberá, E., & Ferrer, R.I. (2006). Grupo de iguales e iniciación sexual adolescente: diferencias de género. *International Journal of Clinical and Health Psychology*, 6, 79-96.
- Ochs, E.P., & Binik, Y.M. (1999). The use of couple data to determine the reliability of self-reported sexual behavior. *Journal of Sex Research*, 36, 374-384.
- Parsons, J.T., Bimbi, D., & Halkitis, P.N. (2002). Sexual compulsivity among gay/bisexual escorts who advertise on the Internet. *Sexual Addiction and Compulsivity*, 8, 101-112.
- Poppen, P.J., & Reisen, C.A. (1997). Perception of risk and sexual self-protective behaviour: A methodological critique. *AIDS Education & Prevention*, 9, 373-390.
- Reisen, C.A. & Poppen, P.J. (1999). Partner-specific risk perception: A new conceptualization of perceived vulnerability to STDs. *Journal of Applied Social Psychology*, 29, 667-684.
- Roberti, J.W. (2004). A review of behavioral and biological correlates of sensation seeking. *Journal of Research in Personality*, 38, 256-279.
- Spitalnick, J.S., DiClemente, R.J., Wingood, G.M., Crosby, R.A., Milhausen, R.R., Sales, J.M., McCarty, F., Rose, E., & Young, S.N. (2007). Brief report: Sexual sensation seeking and its relationship to risky sexual behaviour among African-American adolescent females. *Journal of Adolescence*, 30, 165-173.
- Teva, I., & Bermúdez, M.P. (2007). *Adaptación castellana de la Escala de Búsqueda de Sensaciones Sexuales en adolescentes*. Manuscript non published.
- UNAIDS (2004). *2004 Report on the global AIDS epidemic*. Retrieved on July 2, 2005, from <http://www.unaids.org>.
- UNAIDS (2005). *The Female AIDS Epidemic: 2005 statistics*. Retrieved on July 2, 2005, from <http://womenandaids.unaids.org/womenandaidsnovfin.doc>
- UNICEF, UNAIDS and WHO (2002). *Young people and HIV/AIDS. Opportunity in crisis*. Retrieved on July 3, 2003, from http://www.unicef.org/publications/pub_youngpeople_hivaids_en.pdf
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Erlbaum.
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation seeking*. New York: Cambridge Press.
- Zuckerman, M., Eysenck, S., & Eysenck, H.J. (1978). Sensation seeking in England and America: Cross-cultural, age and sex comparisons. *Journal of Consulting and Clinical Psychology*, 46, 139-149.