Pornography Use and Associated Factors in Adolescents: A Cross-Jurisdictional Approach

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ABSTRACT

Pornography use is common among adolescents. However, there has been limited in-depth examination of cross-country differences in adolescent pornography use. Therefore, the main aim of the present study was to understand cross-jurisdictional differences in problematic pornography use (PPU) in 1810 adolescents from Spain and Mexico. The relationship between sociodemographic variables, loneliness, sexual risk behaviors, and religiosity with the development of PPU and cross-jurisdictional differences between the two Spanish-speaking populations was assessed. In the Spanish sample, pornography use was a mediator of risky sexual behaviors, with this association being greater in males, older individuals and those with a non-heterosexual orientation. In the sample, non-use of condoms was directly statistically predicted by older age, poor familial relationships, low religiosity, and more frequent pornography use. Jurisdictional differences in relationships between variables were observed in the two samples (Spanish and Mexican). Clinical implications and potential sociocultural factors that may underlie observed differences in the two Spanish-speaking cultures are considered and warrant additional investigation.

Keywords: Addictive behaviors, compulsive behaviors, compulsive sexual behavior, adolescents, pornography, sexually explicit material, religion.

1. INTRODUCTION

Pornography may be understood as sexually explicit materials intended to arouse, although there is debate regarding what constitutes pornography (McKee et al., 2020). Scientific investigations into studying pornography use in different countries and cultures has been increasing (Chen, 2022; Efrati, 2020a; Eljawad et al., 2021; Peter & Valkenburg, 2016). Furthermore, there has been a growing focus on pornography use during adolescence, a crucial period for sexual development (Alexandraki et al., 2018). The prevalence of pornography use among adolescents varies across countries. For instance, in Spain, 43.6% of boys and girls (aged 14-18 years) have reported using pornography (Farré et al., 2020), while in Mexico, 29.4% of boys and 14.3% of girls (aged 15-18 years) have used the internet to explore different aspects of sexuality (Ballester-Arnal et al., 2017).

In Spain in recent years there has been an increase in the consumption of pornography among young people, where some studies indicate that between 70-78% of girls and 94-97% of boys have seen pornography (Ballester-Arnal et al., 2023; Sedano-Colom et al., 2024)). In Spain since 2009 there has been an increase in consumption by girls related to changes in attitudes and perception of sexuality (Aznar-Martínez et al., 2023). In Mexico, current data are scarce but pornography consumption seems to be a less common practice, with 48.3% of boys and 15.8% of girls consuming pornography (Medina et al., 2020).

For some adolescents, pornography use may lead to problematic pornography use (PPU), characterized by persistent and poorly controlled consumption despite experiencing clinically significant distress and functional impairment (Gibbons et al., 2020). It is estimated that 1 to 14% of adolescents may experience PPU (Ballester-Arnal et al., 2017; B. Bőthe et al., 2021; Beáta Bőthe, Lonza, et al., 2020; Y Efrati & Gola, 2018; Pizzol et al., 2016; Štulhofer et al., 2020; Svedin et al., 2011). The few prevalence studies in both studies show a slightly higher PPU in Spain (5.55%) than in Mexico (5.19%) (Bőthe et al., 2024).

There is still a debate about the conceptualization of PPU as the ICD-11 only included Compulsive Sexual Behavior Disorder (CSBD) without specifying where PPU should be

categorized (OMS, 2019). In addition, the CSDB was included in impulse control disorders, however many authors support the hypothesis that PPU behaves similarly to behavioral addictions due to its neurobiological alterations (Gola et al., 2017; Sassover & Weinstein, 2022; Stark et al., 2018) and its clinical manifestations (emotional regulation problems, lack of control, withdrawal, dependence, tolerance and conflicts) (Efrati, 2020b; Kor et al., 2014; Villena-Moya et al., 2023). In any case, there are no specific criteria for adolescents in any diagnostic manual.

Multiple factors have been associated with adolescent pornography use including: (a) sociodemographic features (male and older age) (Farré et al., 2020); (b) personality features (higher extroversion, neuroticism, and openness to experience) (Yaniv Efrati & Amichai-Hamburger, 2020); (c) norm-related variables (rule-breaking patterns and substance use) (Peter & Valkenburg, 2016); (d) sexual interest (the use of media to obtain sexual information) (Farré et al., 2020) and sexual pleasure (Grubbs, Wright, et al., 2019); (e) internet behavior (greater exposure to technology) (Ashraaf & Othman, 2019); (f) pubertal maturation (early pubertal timing/maturation) (Alexandraki et al., 2018); and (g) social competencies (relational independence)) (Rivera et al., 2016).

Some factors linked to pornography use and problematic pornography use (PPU) among adolescents are relatively less well understood. For example, religion, may influence the perception of healthy sexual behaviors, and has been linked to less pornography use in adolescents (Hardy et al., 2013). In this context, a Moral Incongruence Model has been proposed. This theoretical model proposes that PPU may not reflect pornography use per se, but rather religious judgments individuals make regarding its consumption and the resulting consequences (Grubbs et al., 2017; Grubbs & Perry, 2019). Religiosity has also been found to moderate the association between pornography use and the development of a PPU, with religiosity being a factor that has an influence on the perception of potential problematic use due to moral judgments of pornography use (Rousseau et al., 2021)

Second, regarding sexual orientation, non-heterosexual individuals seem more likely to use pornography, use pornography more frequently, and develop PPU (Farré et al., 2020). This pattern may possibly reflect unmet needs related to sexual information regarding their orientation (Beáta Bőthe et al., 2019).

Third, family dynamics may influence pornography use and PPU. Adolescent pornography use has been associated with poorer familial relationships (Peter & Valkenburg, 2016). Adolescents who feel more independent from their families, have less familial involvement, experience less parental care and have lower levels of communication often consume pornography more frequently (Alexandraki et al., 2018; Weber et al., 2012; Ybarra & Mitchell, 2005).

Fourth, pornography use may function as a compensatory mechanism for feelings of loneliness (Butler et al., 2018; Yaniv Efrati & Amichai-Hamburger, 2019). As such, engagement may be linked to negative reinforcement motivations.

Lastly, sexual risk behaviors are related to pornography use and PPU. Increased consumption of pornography may encourage condomless sex (Alexandraki et al., 2018; Kotchick et al., 2001; Wright, 2021) and sexual relationships under the effects of drugs and alcohol (Smith et al., 2016a).

There may exist cultural biases in existing research on pornography use during adolescence, as authors such as Peter and Valkenburg (Peter & Valkenburg, 2016) have suggested. Specifically, most existing studies come from North America, Australia, and specific European countries (e.g., the Netherlands and Belgium). This has led to relatively poor understanding of pornography use by adolescents in other jurisdictions, such as Hispanic/Latino countries.

Social Cognitive Theory (SCT) is a multifaceted theory that attempts to explain human cognitive processes and behaviors (Bandura, 1978). This theory has been widely used as a conceptual framework for understanding the consequences of pornography use and how it can shape human sexual behavior (DasGupta, 2017; Sirianni & Vishwanath, 2012; Tokunaga et al., 2020).

According to SCT, a person's personal, behavioral and environmental factors reciprocally influence behavior and thinking (Bandura, 1978, 1989).La teoría del aprendizaje social de bandura Based on this model, we can consider that cultural values also condition sexual attitudes (permissiveness or conservatism, gender stereotypes, homophobia) and sexual motivations (acceptance or rejection of certain practices such as the consumption of pornography), which could have a direct influence on decision making regarding the sexual behavior of adolescents, as has already been studied(Gil-Llario et al., 2021).

When considering countries like Spain and Mexico from this perspective, it is important to acknowledge both similarities and differences. Variations in pornography use should be understood in the context of their specific country characteristics and environmental factors. While Spain has been recognized as a collectivist European country, it arguably retains a greater degree of individualism compared to Mexico. The perception of society as a unified entity is less pronounced in Spain, and collectivist cultures tend to demonstrate higher levels of overall well-being than individualist cultures (Carballeira et al., 2015). In relation to sexual behaviors, more collectivist societies have shown less pornography use and less sexual permissiveness than individualistic societies (Lo et al., 2010). In this context, a main difference between both countries may involve the degree of social restraint, understood as the degree to which individuals attempt to control their impulses and desires. Spain may be considered a restrained society, with actions constrained by social norms, while Mexico may show greater tendencies towards indulgence (Hofstede, 2001). Higher levels of indulgence may reflect greater willingness to enjoy experiences, fulfill desires and impulses, and consume free time (Hofstede, 2001). In this line, sexual initiation is earlier in Mexico than in Spain (Calatrava et al., 2021) and this may be related to the tendency to engage in other sexual behaviors such as sexting (Gil-Llario et al., 2020, 2021a). On the other hand, Mexico has the second-highest population of Catholics in the world after Brazil, and therefore religion may be more deeply rooted there than in Spain (Guzmán, 2016). So these high

levels of religiosity may have an impact on sexual behavior and perceptions of them as seen in other studies (Gil-Llario et al., 2021b; Rousseau et al., 2021).

Socialization may also influence sexual norms (Giménez-García et al., 2013), and there are both similarities and differences between Mexico and Spain in this regard. On the one hand, both countries share cultural values that perpetuate gender inequalities and disparities, where male (versus female) sexual activity and pleasure are more socially acceptable, potentially leading to increased sexual activity and risky behaviors among boys and men (Ballester et al., 2010; M Dolores Gil-Llario et al., 2017; Tung, 2012). However, these gender-related differences were more pronounced among young people in Mexico compared to Spain, particularly in areas involving infidelity and sexual frequency (men reported masturbation, infidelity, and vaginal sex as common, and women tended toward more stable and long-term relationships) (M Dolores Gil-Llario et al., 2017). In Spain, however, due to the rise of feminism, girls are more freely engaging in sexual behaviors such as the consumption of pornography, although this may perpetuate the gender stereotypes present in this material (Aznar-Martínez et al., 2023).

Differences have also been identified between these countries, for example, in reference to the perceived reliability of condom use or the barriers associated with condom use. Specifically, Spanish girls seemed to perceive condoms as more reliable, while Mexicans seemed to report greater barriers to condom availability, possibly due to the greater social pressure that Mexico exerts on female sexuality, which could compound girls' fears of their parents knowing that condoms are available to them (Giménez-García et al., 2013).

Regarding internet use, Spain has more restrictions on internet use than Mexico (Martínez de Morentin et al., 2014), which may impact use and problematic use of pornography by adolescents. However, the percentage of individuals with internet access in Mexico is lower (72%) than in Spain (94%) (Mundial, 2023), and this difference could influence pornography use. However, to date, no specific study has investigated differences in pornography consumption in Spain versus Mexico.

To understand adolescent pornography consumption across jurisdictions, it is important to gather data from multiple countries, ideally through cross-jurisdictional comparative research. Data with adolescent samples in Spain and Mexico are very limited. There are no studies that analyze in depth the impact of pornography in both populations and its different socio-cultural influences. Furthermore, from a methodological point of view, it has been necessary to understand the role played by mediating variables in the influence of pornography (Wright et al., 2023) Therefore, aims of the present study were: (1) (1) to compare associations between pornography use and other sociodemographic and clinical factors through structural equation modeling (e.g., sex, age, sexual orientation, religion, family relationship, loneliness, and risky sexual behaviors) in two adolescent samples, one from Spain and another from Mexico; and, and, (2) to explore within the framework of the SCT the cultural influence of each country on their consumption of pornography and the possible differences between the two countries.between-group differences in sociodemographic characteristics.

It was hypothesized that there would be significant differences in both countries in pornography use and PPU, as well as in their associations with different clinical and sociodemographic variables. More specifically, considering higher levels of indulgence and religiosity in Mexico, we hypothesized self-reported PPU would be more frequent in Mexican versus Spanish adolescents.

More specifically, we hypothesize that (1) Spanish adolescents will have higher pornography use due to greater sexual openness and Internet access; (2) Mexican adolescents will have higher levels of UPP due to higher levels of religiosity and possible cultural bias, and (3) the Spanish sample will have more sexual risk behaviors associated with pornography use due to earlier onset and more prevalent use than Mexican adolescents.

2. METHODS

2.1.Participants and procedure

Inclusion criteria were: (1) participants of any sex, (2) ages between 12 and 18 years, (3) attending schools in Spain/Mexico, (4) understanding Spanish. Students were excluded if they: (1) presented cognitive or literacy difficulties or mental disorders that could interfere with the comprehension of the evaluation battery, (2) did not want to participate in the study, (3) did not have authorization from their parents/legal guardians, in cases of minors. The initial sample of this cross-sectional study consisted of 1,848 adolescents. After discarding questionnaires with missing and inconsistent responses, the final sample included 1,810 adolescents.

For recruitment, multiple public and private schools in Spain were contacted online, as well as several private and public associations in Mexico that appeared on official lists. Finally, four schools (one charter and three private school) in Spain and four schools in Mexico (three public and one private school) agreed to participate in the study during the 2020–2021 and 2021–2022 school years. The 8 schools belonged to different geographical areas and socioeconomic profiles.

When schools showed interest in study participation, they were provided with information regarding the study procedure, including how to address possible questions that may arise. Schools were offered the possibility of conducting assessments using pencil and paper or online through Google Forms. Given COVID-19-related factors, all schools used online assessments. Due to these pandemic conditions, the meetings had to be online and the supervision of data recruitment was more difficult. Students in each grade and group were assessed on the same day, supervised by teachers. There was no financial compensation for either the schools or the participants. However, all schools were permitted to request a psychoeducational online workshop on the use of pornography, with one school requesting and receiving one.

2.2. Instruments

2.2.1. Pornography use and PPU

2.2.1.1. Context of pornography use

Three dichotomous items (yes/no) were used to evaluate exposure of adolescents to sexually explicit material: accidental exposure ("In the last year, when you were doing an online

search or surfing the web, did you ever find yourself on a website that showed pictures of naked people or people having sex when you didn't want to be on that type of website?"), intentional exposure ("Have you ever accessed a pornography website on purpose or downloaded sexual images on purpose?"), or sexual content received by others ("In the last year, have you ever opened a message or a link in a message that showed you real pictures of naked people or people having sex that you didn't want to see?").

2.2.1.2. Pornography Consumption Inventory (ICP; (Reid et al., 2011)

The ICP is a multidimensional tool developed to assess motivations for pornography consumption, as well as the possible functions it fulfills, in four factorial domains: sexual pleasure, sexual curiosity, arousal seeking (to satisfy desires for excitement, fantasy, novelty, and variety), emotional avoidance (to cope with uncomfortable emotions and stressful experiences). The questionnaire includes thirteen Likert-type items (1=Never to 5=Many times) with specific questions (e.g., "I use pornography to change my mood when 1 am nervous, stressed or angry"). The scores range from 15-75 and there is no established cutoff point, with higher scores reflecting greater tendencies to use pornography. For the present study, the Spanish validation was used, which has been found to have excellent reliability >0.90 in all factors and an internal consistency of 0.931 (Leon-Larios, Saavedra-Macias, Albar-Marin, and Gomez-Baya, 2019). In the study sample, internal consistency was $\alpha = 0.933$ for the total score and the total sample ($\alpha = 0.947$ for Spanish participants and $\alpha = 0.932$ for Mexican participants).

2.2.1.3. Problematic Pornography Consumption Scale (PPCS; (Beáta Bőthe et al., 2018)

The PPCS provides a multidimensional measure of the PPU based on the Griffiths' six-component model of addiction (Griffiths, 2005). It consists of eighteen Likert-type items with seven options of responses (1=Never to 7=All the time) (e.g., "I have felt that pornography is an important part of my life"). The items are subdivided into six factors: salience (relevance of the pornography use in the one's life), mood modification (pornography use as a tool to reduce negative feelings), conflict (problems as a result of pornography use, intra and interpersonal

difficulties), tolerance (gradual increase of pornography use without reaching satisfaction), relapse, and withdrawal (psychological distress when pornography use is decreased and/or inhibited). The total scale score ranges from 18 to 126, with a score >87 being considered a clinically significant score for PPU. The original validation obtained good psychometric properties (α= 0.93) (Beáta Bőthe et al., 2018) In the present study, the Spanish validation of the PPCS in an adolescent sample was used (Villena-Moya et al., 2022). In the study sample, internal consistency was α = 0.939 for the total score among the total sample (α = 0.925 for Spanish participants and α = 0.940 for Mexican participants).

2.2.2. Risky sexual behaviors

Non-use of condoms during sexual intercourse and sexual intercourse under the effects of substances (alcohol and other drugs) were assessed by means of two dichotomous items (yes/no) (e.g., "Have you ever had sexual intercourse without using a condom?"). These items were adapted from constructs studied in previous research (Valencia et al., 2018).

2.2.3. Loneliness

2.2.3.1.The University of California Los Angeles Loneliness Scale – Version 3 (UCLALS-3; (Russell, 1996)

The UCLALS-3 evaluates severity of loneliness by means of 20 Likert-type items, each with four options (1=Never to 4=Ever) and nine formulated in positive (e.g. "How often do you think you are a sociable and friendly person?") and eleven in negative (e.g., "How often do you feel rejected?") manners, with scores ranging from 20 to 80 ($\overline{X}$ = 40.08, σ = 9.5). The higher the score, the greater the loneliness. For the present study, the scale adapted and validated in a Spanish sample was used with a Cronbach's alpha α of 0.91 (Expósito & Moya, 1993). In the study sample, internal consistency was α = 0.709 for the total score among the total sample (α = 0.705 for Spanish participants and α = 0.733 for Mexican participants).

2.2.4. Religiosity

Religiosity was assessed with three items used in previous research (Grubbs, Kraus, et al., 2019): "I consider myself religious," "Being religious is important to me" and "I attend religious services regularly." Response options ranged from 1 (strongly disagree) to 7 (strongly agree). In previous research, the sum of the scores obtained for the three items was considered for the purposes of analyses (α = .94) (Grubbs, Kraus, et al., 2019). In the study sample, internal consistency was α = 0.911 among the total score among the total sample (α = 0.928 for Spanish participants and α = 0.898 for Mexican participants).

2.2.5. *Sociodemographic variables*

Sociodemographic variables included age, biological sex ("indicate your biological sex": *boy, girl, or other with specification*), gender ("you feel like a": *boy, girl, or other with specification*), educational level (*in years*), work-study balance ("Do you currently combine your studies with a job?": *Yes/No*), quality of family relationships ("In general, what is your relationship with your family members?": *from very bad to excellent*) and school grades (*from Failing to Excellent).*

2.3 Ethics

A Clinical Research Ethics Committee approved the study (reference PI: 018/2020) approved the study. The present study was conducted in accordance with the latest version of the Declaration of Helsinki. A formal and written permit was obtained from the management boards of each school that agreed to participate in the study. Each school provided adult students and parents or legal guardians of underage students with information about the study. Those parents or minors who did not wish to participate informed the school board. It was clarified that participation was voluntary, and participants could withdraw at any time.

2.4 Statistical analysis

The statistical analysis was done using Stata17 for Windows (Stata-Corp., 2021). Between-group comparisons used chi-square tests (χ^2) for categorical measures and T-tests for quantitative assessment. Effect sizes for the proportion and mean comparisons were based on the standardized

Cohen's h and Cohen's-*d* coefficients (thresholds of |0.50| and |0.80 were considered for moderate and large effect size) (Kelley & Preacher, 2012).

Path analysis was implemented through structural equation modeling (SEM), which allowed us to estimate the magnitude and size of the associations defining both direct and indirect effects (mediational links). The model specification (rationale for the path diagram) was based on the theoretical model of planning behavior provided by the cumulated empirical evidence, promoting consistency of emerging associations. All parameters were free-estimated with the maximum-likelihood estimation method. To assess the potential moderation role of the cultural influences, we performed a multigroup SEM defining the geographical origin as a mediator variable (Spain versus Mexico), and next checking the pattern invariance by constraining the loadings (path coefficients) to be equal across the groups. Goodness-of-fit was evaluated using standard statistical measures, i.e., the root mean square error of approximation (RMSEA), Bentler's Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and standardized root mean square residual (SRMR). Adequate model fit was considered for non-significance by χ^2 tests and based on the following criteria (Barrett, 2007): RMSEA<0.08, TLI>0.9, CFI>0.9 and SRMR<0.1. The global predictive capacity of the model was measured by the coefficient of determination (CD).

3. RESULTS

3.1. Characteristics of the participants and comparisons between countries

Table 1 includes participant characteristics and comparisons between countries (Spain versus Mexico). Compared to Mexican participants, the subsample of Spanish participants included a higher proportion of boys, higher education levels, higher grades, individuals with only academic work, and better quality of family relationships. All pornography-use indicators achieved higher levels within the Spanish subsample (types of pornography use [accidental, received, and intentional] and PPCS, and ICP scores). The mean perceived loneliness was lower among Spanish participants, as well as the relevance of religion. Regarding sexuality-related measures, a higher proportion of individuals reported same-sex attraction in Spain, and Spanish participants also

reported higher likelihoods of risky sexual behaviors (non-condom use and sexual relationships under the effects of substances).

--- Insert Table 1 ---

Table 2 displays the distribution of the types of sexually explicit material, and the comparison between the groups. These results were obtained among the participants who reported pornography use. The most visualized media format was dependent on the type of pornography use (accidental, received, and intentional), and differences between the groups were identified. Among the Spanish individuals, videos were the most frequent format, followed by images (in the case of accidental pornography) and mixed (for received and intentional pornography use). The most frequent media type among Mexican participants was images for accidental pornography use, mixed (for received pornography use) and videos (for intentional pornography use).

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3.2. Path analysis

Table 3 contains the correlation matrix for the variables considered for the path analysis (the upper part shows the estimates within the Spanish sample, and the lower part estimates within the Mexican sample). In the model with Spanish participants, being male increased the likelihood of intentional pornography use, and older age was associated with higher likelihood of non-condom use and risky sexual behaviors. Poor familial relationships were associated with increased perceived loneliness. Among Mexican participants, male sex was also associated with intentional pornography use, and poor family relationships were associated with loneliness. In this work, the PPU level was not included in the path analysis due the strong association between the PPCS with the ICP (in presence of multicollinearity the variances associated to the path coefficients estimators may become too large and leads to unreliable estimates).

--- Insert Table 3 ---

Adequate goodness-of-fit was achieved for the multi-group SEM assessing the invariance by the origin of the participants (Spain versus Mexico): $\chi^2 = 11.12$ ($df = 6$; $p = .085$), RMSEA = 0.031 (95% confidence interval: 0.001 to 0.059), CFI = 0.997, TLI = 0.971, SRMR = 0.012. The global predictive capacity was CD = 0.382 (around 38%). Measurement of invariance across the structural parameters obtained significant results: a) structural coefficients: $\chi2 = 77.07$, $df = 21$, $p < .001$; b) structural intercepts: $\chi2 = 34.71$, $df = 4$, $p < .001$; and c) covariance of structural errors: $\chi2 = 105.78$, $df = 6$, $p < .001$. These results suggested that the paths (underlying relationships) were different for young people in Spain and Mexico (Table 4 displays the complete results measuring invariance in the study).

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Figure 1 includes path-diagrams with standardized coefficients within each sample (Spain and Mexico). Estimated coefficients in the path-diagrams corresponded to the multi-group analyses, and separate plots were generated to facilitate interpretation. Table S1 (supplementary material) includes the complete results for the SEM. For Spanish participants, non-condom use during sexual intercourse was directly predicted by lower scores in loneliness, older age, and poor familial relationships. Sexual intercourse under the influence of alcohol or drugs was directly predicted by older age, non-heterosexual orientation, poor familial relationships, and higher levels of pornography use. Loneliness perception was also a mediational link for non-condom use in different paths; being female, of non-heterosexual orientation, and poor familial relationships increased the sense of loneliness, which also correlated with non-condom use. Pornography use was also a mediator for the presence of sexual intercourse under the influence of substances; being male, older, and of non-heterosexual orientation increased the likelihood of pornography use.

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For Mexican participants, non-condom use during sexual intercourse was directly predicted by older age, poor familial relationships, low relevance of religion, and higher frequency of pornography use. Sexual intercourse under the influence of substances was increased for older

participants and those with non-heterosexual orientations, poor familial relationships, low relevance of religion, and high frequency of pornography use. Pornography use also achieved indirect effects (i.e., it was a mediational link) for the presence of risky sexual behaviors under the effects of alcohol and drugs for some features; male sex, older age, non-heterosexual orientation, poor familial relationships, and low relevance of religion all increased the likelihood of pornography use, which was then correlated with sexual behavior under the effect of substances.

4. DISCUSSION

The present study aimed to compare the association between pornography use and other sociodemographic and clinical factors (e.g., sex, age, sexual orientation, religion, family relationships, loneliness, and risky sexual behaviors) in two adolescent samples, one from Spain and another from Mexico. Moreover, it aimed to explore the cultural differences of both groups within the framework of the influence of the environment and from the perspective of the SCT.

In the present study, the sample of Spanish adolescents was characterized by a higher proportion of boys, higher education levels, higher grades, a higher proportion of individuals with only academic work, and better quality of familial relationships, in comparison with Mexican participants. The greater presence of boys in Spanish schools, compared to those in Mexico, could be explained by the types of schools that participated. One of the Spanish schools was exclusively for boys, whereas, in Mexico, all schools were coeducational. Additionally, there was greater heterogeneity in the Mexican sample with respect to biological sex. Mexican students presented worse academic performance and lower educational levels compared to Spanish adolescents. These findings may reflect the socioeconomic levels of Mexican adolescents being generally lower than those of Spanish adolescents, as Mexico is a developing country. Consequently, Mexican students may have a greater need to reconcile work and studies to support the family economy, which may impact educational outcomes. Finally, a better familial relationship was observed in Spanish adolescents compared to Mexican adolescents. These results may have been unexpected, given that Spanish culture is more individualistic (Carballeira et al., 2015). However, the results

could be explained, at least partially, by greater rates of domestic violence that Mexicans report in comparison with Spaniards (Galván, 2022).

In our study, and contrary to the postulated hypotheses, all pornography-use indicators achieved higher levels within the Spanish adolescents (type of pornography use, PPCS, and ICP scales) in comparison with Mexican participants. We hypothesized higher self-reported PPU in Mexican adolescents, considering the higher levels of indulgence in Mexico and its higher levels of religiosity (in accordance with the theory of moral incongruence). However, the higher scores obtained in the indicators of pornography use and PPU in Spanish adolescents could be explained, at least partially, by the presence of a greater number of boys in the Spanish sample. Male sex predisposes to more frequent pornography use and higher prevalence of PPU (Farré et al., 2020; Peter & Valkenburg, 2016). In Spain, pornography use continues to be more prevalent among men, although it has increased among women (Sedano-Colom et al., 2024).The greater sexual permissiveness of women has allowed them to explore their sexuality more freely in recent years. (Aznar-Martínez et al., 2023). However, Mexico still has a very restrictive culture for the exploration of women's sexuality (Ballester-Arnal et al., 2017). So the gender-related aspects of both cultures could also be behind these findings and explain how sexual behaviors may be conditioned by social and cultural factors through the lens of SCT. The use of the internet for recreational purposes is also more widespread in Spain than in Mexico (Aznar-Díaz et al., 2020) which could favor a greater predisposition to the use of pornography. In this regard, the Mexican population also has less access to the internet, which could explain the lower use of pornography (Mundial, 2023). In addition, higher levels of online sexual activities have been found in the Spanish population (Ballester-Arnal et al., 2017), and therefore, the use of online pornography may be a more common practice in Spain than in Mexico. In addition, Mexican adolescents have shown more permissive attitudes towards other sexual activities such as sexting (perceiving it as more fun, exciting, and unrelated to harm) (María Dolores Gil-Llario et al., 2021). Therefore,

Mexican adolescents may have a greater risk perception bias toward pornography use and be less aware of possible PPU.

It is interesting to note that the research was conducted in the middle of COVID-19 so this could increase access to the Internet and the possibility of consuming pornography in general, but especially in Spanish adolescents due to their greater availability of the Internet (Mundial, 2023)and perhaps the greatest parental restrictions in the Spanish (Martínez de Morentin et al., 2014) sample decrease due to this special situation.

Regarding other measures related to sexuality, a higher proportion of individuals reported same-sex attraction in Spain. This higher proportion of same-sex attraction individuals in Spain may be attributable to a society with a higher rate of diversity inclusion (Lamontagne et al., 2018), in comparison with Mexico.

The greater openness of Spain in this sense could make adolescents more daring to openly mention their sexual orientation and more able to know about it due to greater openness and information on the subject. This social context from the SCT may provide an environment of greater security to Spanish adolescents compared to Mexican adolescents.

However, it seems that in both samples non-heterosexuality is related to a greater number of risky sexual behaviors, so that despite the greater openness in Spain in general, cultural biases towards homosexuality require further study and information on the subject to prevent this type of problems (Moliner Miravet et al., 2018).

Spanish participants also had a higher likelihood of risky sexual behaviors (non-condom use and sexual relationships after alcohol/drugs use). The higher scores on risky sexual behaviors in the Spanish sample were supported by previous studies that showed that condom use in Spain has been decreasing in recent years due, among other factors, to increased use of alcohol during sexual intercourse (Ballester-Arnal et al., 2022). These previous findings fit with the higher alcohol/drug use during sex observed in our Spanish sample and the association between both variables.

Among Spanish adolescents, being male increased the likelihood of pornography use. Older age was associated with higher likelihood of non-condom use and risky sexual behaviors, and poor familial relationships increased perceived loneliness. Among Mexican adolescents, male sex was also associated with higher likelihood of pornography use, and poor familial relationships with loneliness. As mentioned above, being male has been linked to higher pornography use in multiple cultures (Farré et al., 2020; Peter & Valkenburg, 2016; Petersen & Hyde, 2010; Sinković et al., 2013), as well as in samples from both countries studied. Therefore, sex may be a predictor variable at a cross-country level. Future studies may investigate further how gender-related variables link to consumption of pornography.

The current findings are also consistent with previous research which observed that condom use decreased with age (Ballester-Arnal et al., 2022). This could be due, among other factors, to the fact that, with age, the number of stable partners increases, and consequently, the fear of contracting sexually transmitted diseases is reduced (Ballester-Arnal et al., 2022; Walsh-Buhi & Helmy, 2018). Finally, in both populations, poor familial relationships appeared to foster loneliness. These results are consistent with previous findings suggesting that family closeness protects against adolescents' experiences of loneliness (Heshmati et al., 2021). In addition, another cross-country study between Mexico and Spain showed the importance of positive interactions in the family climate in the acquisition of skills for social interactions (Estévez et al., 2016).

In the Spanish sample, non-condom use during sexual intercourse was directly predicted by less loneliness, older age, and poorer familial relationships. The association between family dynamics and loneliness could also explain the relationship between these two variables and the non-use of condoms in the Spanish sample. Adolescents who live in a poorer familial environment may exhibit lower levels of emotional regulation that, consequently, predispose them to engage in risky sexual intercourse (Houck et al., 2018). This association may be greater with age, probably due to increased interest and participation in sexual intercourse (Peter & Valkenburg, 2016). In

this vein, previous studies associated positive relationships with caregivers with the development of adolescent mental and sexual health (Sieving et al., 2017).

In the Spanish sample, sexual intercourse under the influence of alcohol or drugs was directly predicted by older age, non-heterosexual orientation, poor familial relationships, and higher levels of pornography use. This influence of increased pornography use on sex under the influence of alcohol and drugs was supported by previous research that also found these associations in adolescents (Farré et al., 2020; Peter & Valkenburg, 2016; Smith et al., 2016b).

Pornography use was a mediator, in the Spanish sample, for the presence of sexual intercourse under the influence of substances, and being male, older, and of a non-heterosexual orientation increased the likelihood of pornography use. Previous research has also observed that same-sex-attracted individuals show higher pornography use (Beáta Bőthe et al., 2019) and greater PPU (Borgogna et al., 2022). This could be due, among other factors, to the fact that these individuals could have been using pornography to confirm their sexual orientation or as an alternative source for learning about sexuality for non-heterosexual adolescents, since information on sexuality is often more limited for this population, as other authors have suggested (Borgogna et al., 2022; Beáta Bőthe et al., 2019; Beáta Bőthe, Vaillancourt-Morel, et al., 2020).

In the Mexican sample, a link was also found between pornography use and non-use of condoms during sexual intercourse, combined with older age, lower religiosity, and poorer familial relationships. These findings may support the Antecedents, Context and Effects (ACE) theoretical model, which explains that consequences of pornography use in affective–sexual relationships may be determined by other predictor variables (Campbell & Kohut, 2017). In this case, the negative effect of pornography on sexual relationships may be enhanced by poorer familial relationships, low religiosity, and older age.

Moreover, in the Mexican sample, we observed an indirect effect of pornography use on sexual risk behaviors for males, older participants, non-heterosexual participants, and those with low levels of religiosity. In the model, the last variables increased the use of pornography and enhanced

sexual relations under the influence of substances. In contrast to other studies where high levels of religiosity seemed to condition the perception of negative consequences of pornography use and overestimate pornography use (Floyd & Grubbs, 2022), in the present study, less religiosity favored the use of pornography. This could be attributed to multiple reasons: (a) that religiosity was a protective factor against pornography use (Hardy et al., 2013), (b) that, due to religious beliefs, people were less sexually active (Zaleski & Schiaffino, 2000), or (c) that pornography consumption was similar to or higher than in non-religious individuals, but that there was a higher desirability bias in these individuals, conditioned by their religious beliefs, or lastly, (d) that the instruments used to measure religiosity are actually measuring other variables, such as sense of belonging to a group or time spent in community. In addition, the religiosity variable seemed to be more relevant in the Mexican population, probably because it is a culture with higher levels of religiosity, thus giving rise to cultural differences between Mexico and Spain.

4.1. Clinical implications

Despite international interest in the study of pornography use and its possible consequences in adolescence, cross-country studies in Spanish-speaking populations are scarce. The results of the present study suggest multiple cultural differences in terms of adolescent pornography use. At a clinical level, understanding these cultural factors provides an opportunity to develop different strategies for the evaluation and management of the different profiles of adolescents who may seek therapeutic help for PPU. For example, the association between loneliness and PPU found in the Mexican adolescent population may suggest different treatment approaches, emphasizing the need to enhance social interactions and interpersonal skills in such populations. Moreover, the higher PPU levels in Spanish adolescents may suggest the need to design Spanish psychoeducational programs on sexuality to address PPU as a maladaptive coping strategy. Finally, adolescents with non-heterosexual orientations are important to consider regarding clinical demands for PPU given both increased likelihood of PPU and associations with sexual risk behaviors. Therefore,

interventions at early ages may be able to help prevent the development of compulsive or problematic behaviors related to pornography use and sexuality.

4.2. Limitations

This study has limitations. First, the cross-sectional nature of the study did not permit the establishment of causal relationships between variables. Second, the use of self-reported questionnaires may be associated with desirability biases, especially in the case of adolescent samples; therefore, caution should be exercised in the interpretation of results. In addition, some items were not validated and were self-designed. As such, the statistical power of these associations may also be biased. Third, other factors, such as personality features, attachment styles, and the presence of psychiatric disorders, were not taken into account. Fourth, the different schools (i.e., coeducational schools versus male-only) warrant consideration as a possible limitation in the interpretation of the results. Fifth, the Spanish sample included more boys than did the Mexican sample, which could be a bias. Sixth, the measures of sexual risk behaviors were dichotomous, and results should be interpreted with caution. Finally, both samples may not be representative of both countries (Spain and Mexico), and therefore may not be generalizable to the entire population of each country.

5. CONCLUSIONS

The findings of the present study revealed significant differences between different Spanish-speaking cultures (Mexico and Spain) with respect to pornography use and associated factors. These differences highlight the importance of considering factors cross-jurisdictionally when assessing pornography use and PPU in adolescent populations. Longitudinal studies are needed to better define these relationships over time.

Conflict of interest
Dr. Fernández-Aranda received consultancy honoraria from Novo Nordisk and editorial honoraria as EIC from Wiley. Dr. Potenza discloses that he has consulted for and advised Game Day Data, Addiction Policy Forum, AXA, Idorsia, Baria-Tek, and Opiant Therapeutics; been involved in a patent application with Yale University and Novartis; received research support from the Mohegan Sun Casino, Children and Screens and the Connecticut Council on Problem Gambling; consulted for or advised legal and gambling entities on issues related to impulse control, internet use and addictive behaviors; provided clinical care related to impulse-control and addictive behaviors; performed grant reviews; edited journals/journal sections; given academic lectures in grand rounds, CME events, and other clinical/scientific venues; and generated books or chapters for publishers of mental health texts. The rest of the authors have no conflicts of interest with the content of this manuscript.

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Table 1 *Descriptive for the variables of the study*

		Spain (n=650)		Mexico (n=1,160)			
Sociodemographics		*n*	*%*	*n*	*%*	*p*	*|h|*
Sex	Women	325	50.0%	787	67.8%	**<0.001***	0.36
	Men	325	50.0%	373	32.2%		
Education	High school / Level1	7	1.1%	37	3.2%	**<0.001***	0.15
	High school / Level 2	14	2.2%	419	36.1%		**0.99†**
	High school / Level 3	20	3.1%	467	40.3%		**1.02†**
	High school / Level 4	190	29.2%	237	20.4%		0.20
	Senior school / Level1	184	28.3%	0	0.0%		**1.12†**
	Senior school / Level2	235	36.2%	0	0.0%		**1.29†**
Grades	Suspense	59	9.1%	45	3.9%	**<0.001***	0.22
	Approved	117	18.0%	462	39.8%		**0.52†**
	Remarkable	306	47.1%	453	39.1%		0.16
	Excellent	168	25.8%	200	17.2%		0.21
Employment	Student	594	91.4%	862	74.3%	**<0.001***	**0.51†**
	Student and working	56	8.6%	298	25.7%		
Family relationships	Very bad	5	0.8%	1	0.1%	**<0.001***	0.12
	Bad	4	0.6%	13	1.1%		0.06
	Mild	45	6.9%	160	13.8%		0.23
	Good	152	23.4%	270	23.3%		0.00
	Very good	266	40.9%	341	29.4%		0.24
	Excellent	178	27.4%	375	32.3%		0.11
		Mean	*SD*	*Mean*	*SD*	*p*	*|d|*
Age (yrs-old)		15.99	1.08	15.83	1.18	**0.004***	0.14
Pornography use (prevalence)		*n*	*%*	*n*	*%*	*p*	*|h|*
Accidental		451	69.4%	611	52.7%	**<0.001***	0.34
Received		285	43.8%	416	35.9%	**<0.001***	0.16
Intentional		326	50.2%	259	22.3%	**<0.001***	**0.59†**
Problematic pornography use		*Mean*	*SD*	*Mean*	*SD*	*p*	*|d|*
PPCS: salience		4.46	2.86	3.82	2.11	**<0.001***	0.26
PPCS: tolerance		5.19	3.70	3.97	2.57	**<0.001***	0.38
PPCS: mood modification		4.20	2.87	3.52	1.80	**<0.001***	0.28
PPCS: relapses		4.36	3.17	3.66	2.38	**<0.001***	0.25
PPCS: withdrawal		5.36	4.26	4.25	3.19	**<0.001***	0.30
PPCS: conflicts		4.07	2.84	3.50	1.82	**<0.001***	0.24
PPCS: total		27.65	16.79	22.72	11.53	**<0.001***	0.34
Pornography consumption		*Mean*	*SD*	*Mean*	*SD*	*p*	*|d|*
ICP: emotional avoidance		7.12	3.82	6.14	2.87	**<0.001***	0.29
ICP: sexual curiosity		6.41	3.70	5.82	3.54	**<0.001***	0.16
ICP: excitement		9.16	5.80	6.09	4.18	**<0.001***	**0.61†**
ICP: total score		22.69	11.28	18.05	9.17	**<0.001***	0.45
Loneliness		*Mean*	*SD*	*Mean*	*SD*	*p*	*|d|*
UCLA: loneliness total		38.39	10.10	43.36	11.55	**<0.001***	0.46
Religious		*Mean*	*SD*	*Mean*	*SD*	*p*	*|d|*
Relevance of religion		3.43	2.28	4.03	2.17	**<0.001***	0.27
Other sexual measures		*n*	*%*	*n*	*%*	*p*	*|h|*
Sexual orientation	Heterosexual	561	86.3%	1025	88.4%	**0.020***	0.06
	Homosexual	26	4.0%	22	1.9%		0.13
	Bisexual	57	8.8%	109	9.4%		0.02
	Asexual	6	0.9%	4	0.3%		0.07
Sex without preservatives	No	517	79.5%	980	84.5%	**0.008***	0.13
	Yes	133	20.5%	180	15.5%		
Sex with alcohol-drugs	No	531	81.7%	1074	92.6%	**<0.001***	0.33
	Yes	119	18.3%	86	7.4%		

Note. SD: standard deviation. *Bold: significant comparison. †Bold: effect size into the ranges mild to large.

Table 2 *Descriptive for the variables of the study*

		Spain; *(n=451)*		Mexico; *(n=611)*			
		n	*%*	*n*	*%*	*p*	*|h|*
Porno accidental	Videos	244	54.1%	195	31.9%	**<0.001***	**0.51†**
	Comics / magazines	1	0.2%	1	0.2%		0.01
	Images	205	45.5%	415	67.9%		**0.50†**
	Mixed	1	0.2%	0	0.0%		0.09
		Spain; *(n=285)*		Mexico; *(n=416)*			
		n	*%*	*n*	*%*	*p*	*|h|*
Porno received	Videos	158	55.4%	138	33.2%	**<0.001***	**0.51†**
	Comics / magazines	1	0.4%	0	0.0%		0.12
	Mixed	126	44.2%	278	66.8%		**0.52†**
		Spain; *(n=326)*		Mexico; *(n=259)*			
		n	*%*	*n*	*%*	*p*	*|h|*
Porno intentional	Videos	283	86.8%	195	75.3%	**0.003***	0.30
	Comics / magazines	2	0.6%	3	1.2%		0.06
	Images	1	0.3%	0	0.0%		0.11
	Mixed	40	12.3%	61	23.6%		0.30

Note. SD: standard deviation. *Bold: significant comparison. †Bold: effect size into the ranges mild to large.

Table 3 *Correlation matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 UCLA: total	---	0.03	0.07	0.13	0.10	0.01	0.18	-0.06	-0.01	**-0.38†**	-0.10	-0.13	-0.02
2 ICP: total score	*0.17*	---	**0.72†**	0.13	0.12	**0.62†**	0.04	0.16	0.16	-0.09	-0.09	**0.49†**	0.12
3 PPCS: total score	*0.14*	***0.76†***	---	0.11	0.13	**0.44†**	-0.04	0.11	0.13	-0.10	0.10	**0.41†**	0.05
4 Pornography use: accidental	*0.13*	*0.11*	*0.13*	---	**0.28†**	0.19	0.10	0.06	0.07	-0.10	-0.06	-0.07	0.11
5 Pornography use: received	*0.16*	*0.15*	*0.12*	***0.33†***	---	0.16	0.06	0.15	0.17	-0.13	-0.02	-0.07	0.09
6 Pornography use: intentional	*0.13*	***0.59†***	***0.43***	*0.20*	*0.21*	---	0.07	0.13	0.15	-0.08	-0.11	**0.46†**	0.11
7 Sexual orientation (non-hetero.)	*0.16*	*0.12*	*0.07*	*0.06*	*0.12*	*0.14*	---	0.04	0.11	-0.22	-0.15	-0.14	0.02
8 Sex without preservatives (yes)	*0.14*	*0.20*	*0.11*	*0.09*	*0.18*	*0.23*	*0.08*	---	**0.63†**	-0.10	-0.09	0.01	**0.28†**
9 Sex with alcohol- use (yes)	*0.13*	*0.18*	*0.09*	*0.09*	*0.15*	*0.19*	*0.11*	***0.49†***	---	-0.11	-0.09	-0.03	**0.24†**
10 Family relationships (bad)	***-0.48†***	*-0.12*	*-0.10*	*-0.07*	*-0.10*	*-0.11*	*-0.14*	*-0.19*	*-0.13*	---	0.08	0.08	0.03
11 Religion (relevance)	*-0.14*	*-0.16*	*-0.07*	*-0.02*	*-0.04*	*-0.15*	*-0.17*	*-0.13*	*-0.14*	*0.16*	---	-0.02	-0.06
12 Gender (male)	*-0.12*	***0.31†***	***0.31†***	*-0.01*	*-0.11*	***0.25†***	*-0.12*	*0.02*	*0.02*	*0.12*	*-0.13*	---	-0.07
13 Age (yrs-old)	*0.05*	*0.13*	*0.06*	*-0.01*	*0.07*	*0.15*	*-0.08*	*0.21*	*0.12*	*-0.03*	*-0.15*	*0.15*	---

Note. Upper part, normal font: Spain (*n*=650). Lower part, italic font: Mexico (*n*=1,160).

†Bold: effect size within the mild-moderate to large-high range (|R|>0.24).

Table 4 *Invariance analysis: test for each parameter class and group level fit-statistics*

Test for each parameter class		Coefficient	SE (coeff.)	z-stat	p	St.coeff
Loneliness	Sex	-2.3069	0.6875	-3.36	0.001	-0.0934
	Sexual orientation	3.6220	1.0043	3.61	<0.001	0.1006
	Family relations	9.9037	0.8935	11.08	<0.001	0.3064
	Religion (relevance)	-0.5279	0.1496	-3.53	<0.001	-0.0991
Pornography use	Sex	6.2124	0.5506	11.28	<0.001	0.3166
	Age (years)	0.5729	0.2130	2.69	0.007	0.0740
	Sexual orientation	3.9947	0.8021	4.98	<0.001	0.1398
	Family relations	2.1102	0.7113	2.97	0.003	0.0822
	Religion (relevance)	-0.3289	0.1200	-2.74	0.006	-0.0777
Non-condom use	Loneliness	0.0017	0.0009	1.80	0.072	0.0546
	Pornography use	0.0065	0.0012	5.52	<0.001	0.1649
	Sex	0.0054	0.0205	0.26	0.792	0.0070
	Age (years)	0.0595	0.0088	6.79	<0.001	0.1946
	Sexual orientation	0.0322	0.0079	4.10	<0.001	0.0285
	Family relations	0.1480	0.0290	5.10	<0.001	0.1461
	Religion (relevance)	-0.0129	0.0048	-2.66	0.008	-0.0770
Sex with alcohol-drugs	Loneliness	0.0012	0.0007	1.76	0.079	0.0540
	Pornography use	0.0037	0.0008	4.47	<0.001	0.1311
	Sex	0.0204	0.0061	3.35	0.001	0.0365
	Age (years)	0.0216	0.0064	3.36	0.001	0.0977
	Sexual orientation	0.0639	0.0217	2.94	0.003	0.0783
	Family relations	0.0796	0.0213	3.74	<0.001	0.1086
	Religion (relevance)	-0.0114	0.0036	-3.19	0.001	-0.0944
Group-level goodness-of-fit statistics		N	SRMR	CD	χ^2(df=3)	p
	Spain	650	0.013	0.426	5.115	.164
	Mexico	1,160	0.011	0.317	5.999	.112

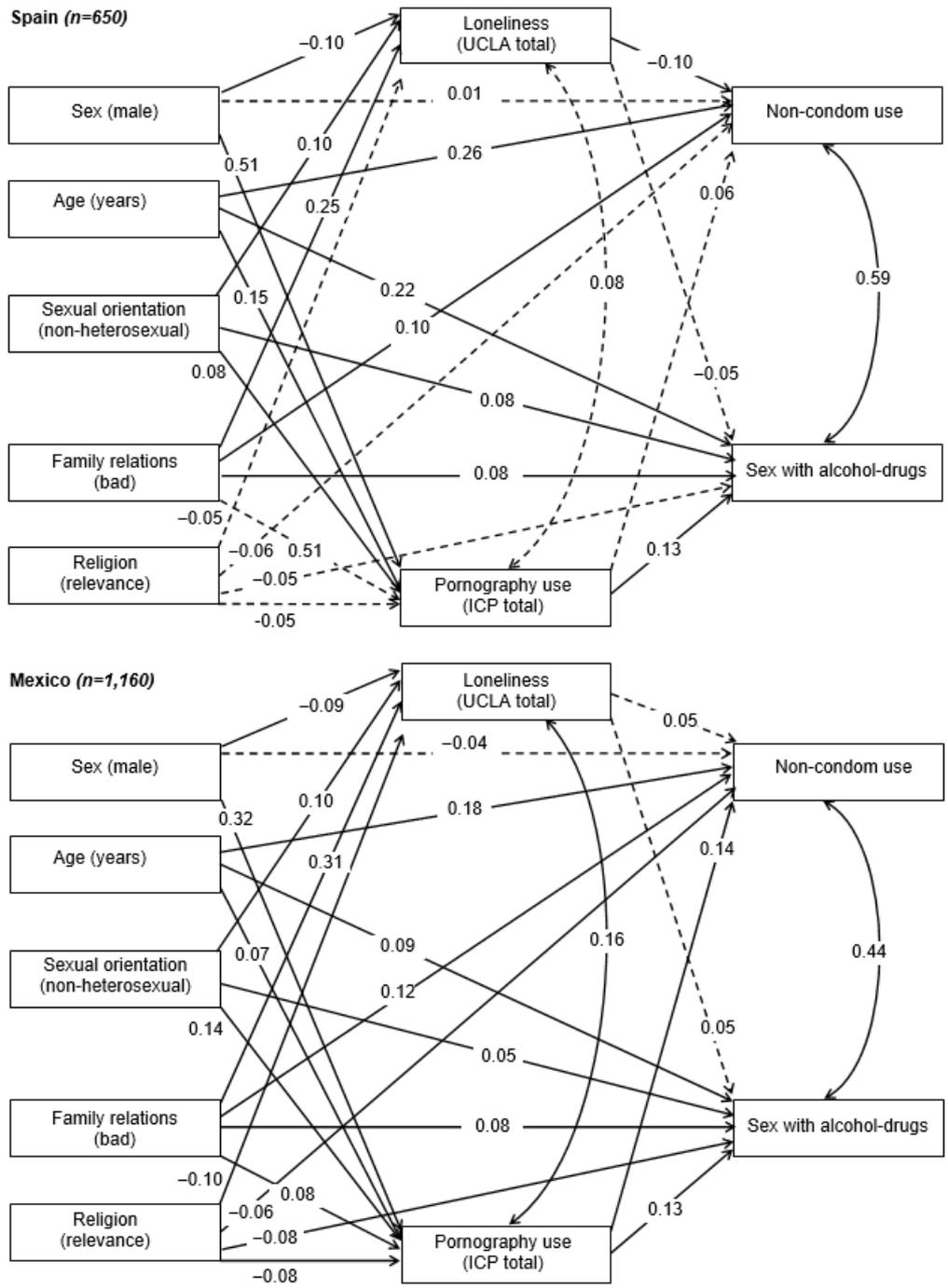*Note.* SE: standard error. St.coeff: standardized coefficient.

Figure 1

Spain *(n=650)*

Sex (male)
Age (years)
Sexual orientation (non-heterosexual)
Family relations (bad)
Religion (relevance)

Loneliness (UCLA total)
Non-condom use
Sex with alcohol-drugs
Pornography use (ICP total)

−0.10
0.01
0.10
0.26
0.51
0.25
0.06
0.15
0.22
0.08
0.10
0.59
0.08
0.08
−0.05
−0.05
−0.06 0.51
−0.05
0.13
−0.05
−0.10

Mexico *(n=1,160)*

Sex (male)
Age (years)
Sexual orientation (non-heterosexual)
Family relations (bad)
Religion (relevance)

Loneliness (UCLA total)
Non-condom use
Sex with alcohol-drugs
Pornography use (ICP total)

−0.09
−0.04
0.05
0.10
0.18
0.32
0.31
0.14
0.07
0.09
0.12
0.16
0.05
0.05
0.44
0.08
−0.10
0.08
−0.06
−0.08
0.13
−0.08

Table S1 *SEM: test of total, direct, and indirect effects*

			Total effects					Direct effects					Indirect effects				
			Coeff.	*SE*	*z-stat*	*p*	*St.coeff*	*Coeff.*	*SE*	*z-stat*	*p*	*St.coeff*	*Coeff.*	*SE*	*z-stat*	*p*	*St.coeff*
Loneliness	Sex	Spain	-2.0195	0.7567	-2.67	.008	-0.1000	-2.0195	0.7567	-2.67	.008	-0.1000	*	*	*	*	*
		Mexico	-2.3069	0.6875	-3.36	.001	-0.0934	-2.3069	0.6875	-3.36	.001	-0.0934	*	*	*	*	*
	Sexual orientation	Spain	3.0630	1.1346	2.70	.007	0.1043	3.0630	1.1346	2.70	.007	0.1043	*	*	*	*	*
		Mexico	3.6220	1.0043	3.61	.001	0.1006	3.6220	1.0043	3.61	.001	0.1006	*	*	*	*	*
	Family relationships	Spain	9.0255	1.3983	6.45	.001	0.2467	9.0255	1.3983	6.45	.001	0.2467	*	*	*	*	*
		Mexico	9.9037	0.8935	11.08	.001	0.3064	9.9037	0.8935	11.08	.001	0.3064	*	*	*	*	*
	Religion (relevance)	Spain	-0.2439	0.1669	-1.46	.144	-0.0551	-0.2439	0.1669	-1.46	.144	-0.0551	*	*	*	*	*
		Mexico	-0.5279	0.1496	-3.53	.001	-0.0991	-0.5279	0.1496	-3.53	.001	-0.0991	*	*	*	*	*
Pornography	Sex	Spain	11.6005	0.7608	15.25	.001	0.5146	11.6005	0.7608	15.25	.001	0.5146	*	*	*	*	*
		Mexico	6.2124	0.5506	11.28	.001	0.3166	6.2124	0.5506	11.28	.001	0.3166	*	*	*	*	*
	Age (years)	Spain	1.6067	0.3480	4.62	.001	0.1540	1.6067	0.3480	4.62	.001	0.1540	*	*	*	*	*
		Mexico	0.5729	0.2130	2.69	.007	0.0740	0.5729	0.2130	2.69	.007	0.0740	*	*	*	*	*
	Sexual orientation	Spain	2.7404	1.1377	2.41	.016	0.0836	2.7404	1.1377	2.41	.016	0.0836	*	*	*	*	*
		Mexico	3.9947	0.8021	4.98	.001	0.1398	3.9947	0.8021	4.98	.001	0.1398	*	*	*	*	*
	Family relationships	Spain	2.1020	1.4026	1.50	.134	0.0515	2.1020	1.4026	1.50	.134	0.0515	*	*	*	*	*
		Mexico	2.1102	0.7113	2.97	.003	0.0822	2.1102	0.7113	2.97	.003	0.0822	*	*	*	*	*
	Religion (relevance)	Spain	-0.2586	0.1676	-1.54	.123	-0.0524	-0.2586	0.1676	-1.54	.123	-0.0524	*	*	*	*	*
		Mexico	-0.3289	0.1200	-2.74	.006	-0.0777	-0.3289	0.1200	-2.74	.006	-0.0777	*	*	*	*	*
Non-condom	Loneliness	Spain	-0.0038	0.0016	-2.47	.013	-0.0963	-0.0038	0.0016	-2.47	.013	-0.0963	*	*	*	*	*
		Mexico	0.0017	0.0009	1.80	.072	0.0546	0.0017	0.0009	1.80	.072	0.0546	*	*	*	*	*
	Pornography	Spain	0.0042	0.0015	2.85	.004	0.1184	0.0042	0.0015	2.85	.004	0.1184	*	*	*	*	*
		Mexico	0.0065	0.0012	5.52	.001	0.1649	0.0065	0.0012	5.52	.001	0.1649	*	*	*	*	*
	Sex	Spain	0.0606	0.0264	2.29	.022	0.0751	0.0036	0.0286	0.13	.898	0.0045	0.0569	0.0182	3.13	.002	0.0706
		Mexico	0.0054	0.0205	0.26	.792	0.0070	-0.0311	0.0210	-1.48	.140	-0.0401	0.0365	0.0089	4.09	.001	0.0471
	Age (years)	Spain	0.1056	0.0139	7.58	.001	0.2830	0.0988	0.0140	7.04	.001	0.2648	0.0068	0.0028	2.43	.015	0.0182
		Mexico	0.0595	0.0088	6.79	.001	0.1946	0.0557	0.0087	6.42	.001	0.1824	0.0037	0.0015	2.42	.016	0.0122
	Sexual orientation	Spain	-0.0002	0.0087	-0.02	.985	-0.0001	*	*	*	*	*	-0.0002	0.0087	-0.02	.985	-0.0001
		Mexico	0.0322	0.0079	4.10	.001	0.0285	*	*	*	*	*	0.0322	0.0079	4.10	.001	0.0285
	Family relationships	Spain	0.1212	0.0551	2.20	.028	0.0830	0.1470	0.0567	2.59	.010	0.1006	-0.0258	0.0161	-1.60	.110	-0.0177

			Total effects					Direct effects					Indirect effects				
			Coeff.	*SE*	*z-stat*	*p*	*St.coeff*	*Coeff.*	*SE*	*z-stat*	*p*	*St.coeff*	*Coeff.*	*SE*	*z-stat*	*p*	*St.coeff*
Sex alcohol-drugs	Religion (relevance)	Mexico	0.1480	0.0290	5.10	.001	0.1461	0.1173	0.0301	3.89	.001	0.1158	0.0307	0.0106	2.89	.004	0.0303
		Spain	-0.0108	0.0067	-1.63	.104	-0.0614	-0.0107	0.0066	-1.61	.107	-0.0605	-0.0002	0.0011	-0.15	.881	-0.0009
		Mexico	-0.0129	0.0048	-2.66	.008	-0.0770	-0.0098	0.0048	-2.04	.041	-0.0588	-0.0030	0.0010	-2.93	.003	-0.0182
	Loneliness	Spain	-0.0021	0.0015	-1.38	.168	-0.0541	-0.0021	0.0015	-1.38	.168	-0.0541	*	*	*	*	*
		Mexico	0.0012	0.0007	1.76	.079	0.0540	0.0012	0.0007	1.76	.079	0.0540	*	*	*	*	*
	Pornography	Spain	0.0044	0.0013	3.36	.001	0.1270	0.0044	0.0013	3.36	.001	0.1270	*	*	*	*	*
		Mexico	0.0037	0.0008	4.47	.001	0.1311	0.0037	0.0008	4.47	.001	0.1311	*	*	*	*	*
	Sex	Spain	0.0547	0.0158	3.47	.001	0.0708	*	*	*	*	*	0.0547	0.0158	3.47	.001	0.0708
		Mexico	0.0204	0.0061	3.35	.001	0.0365	*	*	*	*	*	0.0204	0.0061	3.35	.001	0.0365
	Age (years)	Spain	0.0854	0.0135	6.33	.001	0.2388	0.0784	0.0135	5.82	.001	0.2193	0.0070	0.0026	2.72	.007	0.0196
		Mexico	0.0216	0.0064	3.36	.001	0.0977	0.0195	0.0064	3.03	.002	0.0880	0.0021	0.0009	2.31	.021	0.0097
	Sexual orientation	Spain	0.0918	0.0358	2.56	.001	0.0817	0.0862	0.0355	2.43	.015	0.0767	0.0056	0.0079	0.71	.477	0.0050
		Mexico	0.0639	0.0217	2.94	.003	0.0783	0.0445	0.0216	2.06	.039	0.0545	0.0194	0.0052	3.72	.001	0.0238
	Family relationships	Spain	0.0991	0.0539	1.84	.066	0.0708	0.1086	0.0554	1.96	.050	0.0776	-0.0095	0.0153	-0.62	.532	-0.0068
		Mexico	0.0796	0.0213	3.74	.001	0.1086	0.0595	0.0222	2.68	.007	0.0813	0.0200	0.0076	2.65	.008	0.0273
	Religion (relevance)	Spain	-0.0094	0.0065	-1.45	.147	-0.0555	-0.0088	0.0065	-1.36	.174	-0.0519	-0.0006	0.0009	-0.67	.503	-0.0037
		Mexico	-0.0114	0.0036	-3.19	.001	-0.0944	-0.0095	0.0036	-2.67	.008	-0.0789	-0.0019	0.0007	-2.80	.005	-0.0155

Note. Coeff: non-standardized coefficient. SE: standard error. St.coeff: standardized coefficient. * Restrained coefficient.