



Analysis of demographic, psychological and cultural aspects associated with the practice of sexting in Mexican and Spanish adolescents

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ABSTRACT

Sexting is an increasingly frequent phenomenon among adolescents, and it involves risky behaviors such as sextortion or even grooming. This study aims to analyze demographic, psychological, and cultural variables that may explain the nature of this phenomenon. The sample consisted of 471 adolescents from 12 to 18 years old from two countries, Spain and Mexico, with dissimilar levels of gender inequality. Results highlight important differences in sexting behavior between the two countries. We have found higher levels of sexting behaviors in Mexican adolescents (41.5 %) than in Spanish adolescents (24.6 %) as well as an earlier start in Mexican adolescents. Moreover, adolescents in Mexico engage in sexting more frequently. There are no differences, however, in age showing a growing pattern in the two countries, nor in gender, self-esteem or impulsivity. These results are interpreted from a cultural perspective and highlight the importance of studying the phenomenon of sexting within the framework of cultural influences, especially sexism. Considering cultural factors is necessary, in order to implement differential preventive strategies according to each culture. Prevention in countries with high inequality, such as Mexico, should be earlier.

Introduction

There is no doubt about the increasingly important role played by new technologies in people's lives and, in particular, in adolescents' lives, offering new ways of communicating, exchanging information, and interacting (Mifsud, 2009). This scenario contributes to the emergence of a relatively new social phenomenon called sexting. Different definitions can be found for sexting, which can be broadly described "as the sending, receiving, or forwarding of sexually explicit messages, images, or photos to others through electronic means, primarily between cellular phones" (Klettke, Hallford, & Mellor, 2014; p.45).

Sexting is becoming more prevalent. Data drawn from 39 studies (110.380 participants), mostly conducted with adolescents in the United States and Europe, revealed that the mean prevalence of sending and receiving sexts was 14.8 % and 27.4 %, respectively, and the prevalence of forwarding a sext without consent was 12.0 % (Madigan, Ly, Rash, Van Ouystsel, & Temple, 2018). These numbers increased over time and with age, with higher rates found in more recent research and with older youth (Cooper,

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Quayle, Jonsson, & Svedin, 2016; Dolev-Cohen & Ricon, 2020; Gregg, Somers, Pernice, Hillman, & Kernsmith, 2018; Klettke et al., 2014; Madigan et al., 2018). Studies carried out in Spain with adolescents also show a linear, increasing, and significant trend, with a total prevalence between 13.3 % and 28.2 % (Gil-Llario, Morell-Mengual, Giménez-García, & Ballester-Arnal, 2020; Gil-Llario, Morell-Mengual, Jiménez-Martínez et al., 2020; Iglesias-Campos, Gil-Llario, Morell-Mengual, Caballero-Gascón, & Giménez-García, 2018), which is about 3.4 % at 12 years old and rises to 36.1 % at 17 (Gámez-Guadix, de Santisteban, & Resett, 2017). Likewise, in this same context and with more detailed data, a sexting prevalence of 18–21.2 % (boys-girls) and 58.5–51.7 % (boys-girls) is found for sending and receiving sexts, respectively (Gil-Llario, Ballester-Arnal, Iglesias-Campos, Gil-Julíá, & Caballero-Gascón, 2018). Similar data are found in Mexico, with a higher prevalence for passive sexting: 46.29 % (37.03 % boys-9.25 % girls) have received erotic images or videos; 20 % have received invitations (9.25 % boys-10.74 % girls); and 14.07 % have taken erotic photos or videos of themselves (5.92 % boys-8.14 % girls) (Velázquez-Reyes, 2015), although these data were obtained a few years earlier. According to the scientific literature about the growth trend mentioned above (Cooper et al., 2016; Gregg et al., 2018; Klettke et al., 2014; Madigan et al., 2018), prevalence rates in México are currently expected to be higher.

Research on sexting has attracted interest in recent years, given the associated risks and consequences for adolescents' psychosexual development. Adolescents can be exposed to many dangers with potentially negative psychological and social consequences (Livingstone et al., 2017) because of their special vulnerability, as adolescence is considered a critical period for the development of sexual identity and intimacy (Moore & Rosenthal, 2006; Steinberg, 2007). Some of the risks derived from the practice of sexting are grooming (INTECO, 2011), cyberbullying (Ybarra & Mitchell, 2014), and sextortion (Wolak, Finkelhor, & Mitchell, 2012). Likewise, this practice is also linked to high-risk sexual behaviors, including unprotected sex and recent substance use (Benotsch, Snipes, Martin, & Bull, 2013; Van Ouytsel, Walrave, Ponnet, & Heirman, 2015), especially alcohol (Benotsch et al., 2013; Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2017), which tends to be associated with sending more explicit sexual contents (Champion & Pedersen, 2015). The age of sexual initiation is also a relevant issue since an early sexual debut may also have negative health consequences (Kotchick, Shaffer, & Forehand, 2001). Some authors state that adolescents who sext are more likely to engage in sexual relationships earlier than those who do not (Temple & Choi, 2014).

Most studies on this topic have mainly focused on the prevalence of this behavior, as well as its consequences. Although these aspects are important and constitute the basis of the knowledge of this phenomenon, it is necessary to broaden and deepen its analysis. In an attempt to better understand the reality of sexting, different variables emerge as significant, such as the gender and especially the culture in which adolescents grow up, although little research has been carried out on this topic. Social structural theories note the role played by social and cultural factors on adolescents' sexual behavior, which may also be extended to teen sexting (Baumgartner, Sumter, Peter, Valkenburg, & Livingstone, 2014; Eagly & Wood, 2005; Wood & Eagly, 2002).

In this regard, and considering data about the cultural influence on sexting (Marganski, 2017), this phenomenon is expected to be more prevalent in cultures with early sexuality. The age of sexual initiation is about 16 years in Spain (Castro, Bermúdez, Buela-Casal, & Madrid, 2011) and 15 in Mexico (Barragán, Berenzon, Tiburcio, Bustos, & Villatoro, 2019). This earlier sexual onset would be also related to the acceptance of more marked gender roles that prevails in some countries, such as México, and to the gender inequality cultural values (United Nations Development Programme (UNDP), 2018).

These cultural values not only shape behaviors but also attitudes (Schwartz & Boehnke, 2004) and motivations (Bianchi, Morelli, Baiocco, & Chirumbolo, 2019). Regarding adolescents' attitudes towards sexting, diverse studies reveal that the more positive the attitudes towards sexting, the more sexting behaviors are carried out (Hudson & Marshall, 2018; Walrave, Heirman, & Hallam, 2014). Positive attitudes towards sexting are found when sexting is considered fun and exciting, especially by boys, and as part of flirting by boys and girls (Gil-Llario et al., 2018; Rodríguez-Castro, Alonso-Ruido, González-Fernández, Lameiras-Fernández, & Carrera-Fernández, 2017). As a whole, Spanish boys present more positive attitudes towards sexting than girls (Gil-Llario, Morell-Mengual, Giménez-García et al., 2020). Likewise, Latin American adolescents' attitudes towards sexting, although less explored, are also expected to be more positive in men than in women, as it is shown by one of the very few studies that have considered this issue in Latin American countries, specifically Colombia (Gil-Llario, Morell-Mengual, Jiménez-Martínez et al., 2020). Despite the fact that boys seem to have more positive attitudes, it is also important to bear in mind that both positive and negative views of sexting are observed in adolescents from the USA and different European countries, including Spain (Rodríguez-Castro et al., 2017; Wood, Barter, Stanley, Aghtaie, & Larkins, 2015), so that overall adolescents' attitudes towards sexting could be considered ambivalent.

Regarding the reasons for sexting, different options emerge from the literature. Cooper et al. (2016) reported four main motivations that included flirting and/or attracting the partner's attention and pressure by the partner or the group of friends, maintaining a steady partner relationship, and considering sexting to be an experimental phase of adolescence. Furthermore, Drouin, Vogel, Surbey, and Stills (2013) also stated that a frequently identified motive for sexting was to initiate sex and establish intimacy with the partner. Recently, a study carried out by Gil-Llario et al. (2018) in Spain revealed that the main reasons for sexting can be grouped into three categories: those related to romantic aspects, those linked to sexting without thinking or out of boredom, and those carried out in order to make integration in the group easier. Among all motivations, the scientific literature highlights as the most prevalent reasons for sexting to increase the degree of intimacy or passion with one's partner and receive an express request for it (Bianchi et al., 2019; Gil-Llario, Morell-Mengual, Giménez-García et al., 2020).

Although all these motivations are important, the one related to pressure by partner/friends deserves special attention, to the extent that it could explain the greater likelihood of women to send sexual content and men to receive it because women experience pressure or coercion by men (Klettke et al., 2014; Smith-Darden, Kernsmith, Victor, & Lathrop, 2017; Van Ouytsel et al., 2015). In this regard, again it is important to consider the influence of both gender and culture on sexuality in general and on sexting in particular, with more marked results in societies with more inflexible gender roles according to social structural theory and several au-

thors (Eisenman & Dantzker, 2006; Pacheco-Sánchez et al., 2007). For instance, more hostile sexist attitudes are related to greater re-sending of explicitly sexual content without the consent of its original sender (Morelli et al., 2017).

Within this framework, in which the importance of gender and cultural values is highlighted, additional characteristics linked to the personality may contribute to the global understanding of this phenomenon. In this context, impulsivity and self-esteem deserve special attention. Impulsivity has been related to risky behaviors in the past (De Wit, 2009), which means that the lack of ability to control impulses may also contribute to engaging in sexting behaviors without considering their potential consequences. The reviewed scientific literature shows the relationship between sexting and difficulties in emotional competencies (Houck et al., 2014), as well as a low capacity for self-control (Dir, Cyders, & Coskunpinar, 2013; Kerstens & Stol, 2014) and impulsiveness (Baumgartner, Weeda et al., 2014; Dir et al., 2013; Temple et al., 2014). Similar data were found in a recent study with Spanish adolescents. Its findings showed that sexting behavior may generally be associated with a lower evaluation of the possible consequences of sexting and less impulse control (Gámez-Guadix & de Santisteban, 2018). No data have been found for Mexican adolescents on this issue. On the other hand, self-esteem also seems to be associated with sexting. Several studies have found that low self-esteem is related to higher levels of sexting (Barrense-Dias, Berchtold, Surís, & Akre, 2017; Jasso, Lopez, & Gámez-Guadix, 2017). An example is the study by Ybarra and Mitchell (2014) carried out in USA who found that adolescents who shared sexual photos exhibited lower self-esteem. In Mexico, similar data have been obtained (Jasso et al., 2017). However, contrary to what was expected based on these previous findings, no relationship has been found between self-esteem and sexting in Spanish adolescents (Gámez-Guadix & de Santisteban, 2018).

Although young Hispanic people from Mexico and Spain share cultural values about gender differences (Ballester, Gil, Giménez, & Edo, 2010; Torche, 2015), the two countries differ on gender inequality (United Nations Development Programme (UNDP), 2018). To explore cultural differences in relation to gender, the Gender Inequality Index (GII) may be used as a composite measure of gender inequality in three important aspects of human development (reproductive health, empowerment and the labor market). A low GII value shows low inequality between women and men, and vice-versa. In this sense, Mexico has an inequality index of 0.343, which places the country in the 76th position, whereas Spain is ranked 15th, with an inequality index of 0.080. Furthermore, sexist attitudes are of great importance in Mexico (Bringas-Molleda et al., 2017), as is the frequency of victimization among young couples, which is higher than in Spain (Rodríguez-Franco et al., 2010). Considering all this information, it seems to be quite reasonable to imagine that the prevalence of sexting would be higher in Mexican adolescents than in Spanish adolescents. Moreover, gender differences in this practice and the attitudes towards it would be more marked in Mexicans than in Spaniards. Based on this framework, the present study aims to examine demographic, psychological-attitudinal, and cultural variables that may explain the practice of sexting and all these considering two age ranges during adolescence. Specifically, this study aims to compare the prevalence, attitudes, and reasons for sexting in adolescents from two Hispanic cultures with dissimilar levels of gender inequality (Spain and Mexico) as well as to examine predictors of sexting. The study hypotheses are the following:

- (1) Over a quarter of adolescents in both countries will have ever practiced sexting and the prevalence will be higher in late adolescence.
- (2) Mexican adolescents will show a higher prevalence of sexting than Spaniards and their attitudes towards this practice will be more positive, since they show an early sexual debut and live in a cultural context with great polarization of gender roles.
- (3) The most prevalent reason, in both cultures, for the practice of sexting will be the one related to romantic aspects such as to increase the intimacy. To receive an express request for sexting will be an important motive especially in a more sexist culture such as Mexico.
- (4) Some variables such as the age and more favorable and permissive attitudes towards sexting would predict this practice.

Method

Participants

The sample consisted of 471 adolescents, 267 Mexicans (43.9 %) and 264 Spaniards (56.1 %), between 12 and 18 years old ($M = 15.78$; $SD = 2.08$). Regarding gender, 56.9 % were women ($n = 268$) and 43.1 % men ($n = 203$). The mean age of the Mexican sample was 15.82 years ($SD = 2.07$), 56.5 % women and 43.5 % men. The mean age of the Spanish sample was 15.77 years ($SD = 2.08$), 57.2 % women and 42.8 % men. At the time of the evaluation, 43.1 % of Mexican adolescents and 29.5 % of Spaniards reported having a steady partner. Demographics are presented in detail in Table 1. The participants were recruited by simple random sampling from 8 schools (4 in Spain; 4 in México).

Measures

Sexting Behaviors Scale (Dir et al., 2013)

It evaluates the prevalence and frequency of engagement in sexting behaviors, and consists of 7 items: five have to be answered on a 5-point Likert-type scale ranging from 1 "Never" to 5 "Often/daily"; one is a multiple-choice item; and one is an open-answer item. In this study, a Cronbach's alpha of .79 was obtained.

Table 1
Participants' characteristics for each group.

	Spain (%)	México (%)	Total (%)
Gender			
Men	42.8 %	43.5 %	43.1 %
Women	57.2 %	56.5 %	56.9 %
Sexting practice			
12 years (yes)	0%	11.1 %	4.4 %
13 years (yes)	3.7 %	29.4 %	13.6 %
14 years (yes)	16 %	31.6 %	22.7 %
15 years (yes)	28.6 %	23.8 %	26.5 %
16 years (yes)	14.7 %	38.5 %	25 %
17 years (yes)	34 %	51.4 %	41.5 %
18 years (yes)	40.8 %	57.8 %	48.6 %
Steady partner			
12 years (yes)	11.1 %	40 %	23.4 %
13 years (yes)	7.4 %	52.6 %	26.1 %
14 years (yes)	20 %	33.3 %	25.6 %
15 years (yes)	28.6 %	38.1 %	32.7 %
16 years (yes)	26.5 %	26.9 %	26.7 %
17 years (yes)	46.8 %	38.9 %	43.4 %
18 years (yes)	38.2 %	54.7 %	45.7 %

Sexting attitudes scale (Rodríguez-Castro et al., 2017; Weisskirch & Delevi, 2011)

This 14-item scale assesses three dimensions of attitudes towards sexting: perceived risk; relational expectations; and fun-carefree. The items are answered on a 6-point Likert-type scale ranging from 1 "strongly disagree" to 6 "strongly agree". The total score is calculated by adding up the points for each item. Items seven, eight, nine, and ten were added after reversing their scores. Higher scores represent more favorable attitudes towards sexting. The Cronbach's alphas for the original scale factors were .89, .82, and .78, respectively. In this study, the internal consistency for the overall scale was .75.

Motivations for sexting (Drouin & Tobin, 2014)

This instrument consists of 10 items that evaluate the motives for engaging in sexting. It includes motives related to oneself, the peer group, one's partner, and society at large. Respondents answer on a 5-point Likert-type scale that ranges from 1 "never" to 5 "always". In this study, a Cronbach's alpha of .80 was obtained.

Impulsivity scale (Alcázar-Córcoles, Verdejo, & Bouso-Sáiz, 2015; Plutchik & Van Praag, 1989)

It consists of 10 items that include different situations related to the degree of control over one's impulses. Respondents answer on a Likert-type scale with four alternatives that range from 0 "never" to 3 "nearly always". The higher the score, the greater the level of impulsivity. The Spanish adaptation presents good reliability indices ($\alpha = .73$). In this study, a Cronbach's alpha of .74 was obtained.

Rosenberg self-esteem scale (Martín-Albo, Núñez, Navarro, & Grijalvo, 2007; Rosenberg, 1965)

It evaluates general self-esteem, which is understood as feelings of personal worth and respect towards oneself. It consists of 10 items answered on a 4-point Likert-type scale ranging from 1 "strongly disagree" to 4 "strongly agree". The Spanish adaptation presents good internal consistency ($\alpha = .88$) and a Cronbach's alpha of .81.

Procedure

First, the necessary permission was obtained from the Educational authorities. The next step was to request the participation of the schools after explaining the main objectives of the research. Thirdly, students were given an authorization to be completed by their parents and / or legal guardians.

In order to ensure the representativeness of the sample, a stratified simple random sampling procedure was used to select the centers, taking into account population density, type of center, and socioeconomic and sociocultural characteristics. In total, 8 schools were randomly selected (four in Spain; four in México). In each country, two centers in large cities (with more than 1 million inhabitants) and two centers in small cities (with less than 150,000 inhabitants) were selected. Likewise, a state school attended by students of medium socio-economic and socio-cultural level and a center of private ownership attended by students of medium-high socio-economic and socio-cultural level were chosen in each of the cities.

The evaluation sessions were held always during teaching hours. The instruments were administered in electronic format, which prevented missing data or answers since it was an essential requirement to answer all the questions before sending the form. During

the evaluation, a member of our research lab attended each class and administered the instruments to each group as a whole, resolving any doubt. The voluntary and anonymous nature of the responses was maintained at all times, guaranteeing the students' privacy and minimizing social desirability effects.

Data analysis

Prevalence data are analyzed by calculating percentages, descriptive statistics, and the non-parametric chi-square test.

A hierarchical multiple logistic regression was performed to determine the predictors of global sexting. The continuous (age, attitudes towards sexting, impulsivity, and self-esteem) and categorical (gender, nationality, and having a steady partner) variables were introduced in the first block. In the second block, the interactions among all the previously analyzed demographic variables were included to check their moderating effects. Finally, in order to analyze the differences in attitudes towards sexting and reasons for practicing it, Student's *t*-test for continuous variables (attitudes) and the chi-square statistic for the categorical variables (reasons) were used. The statistical analyses were performed with the statistical software IBM SPSS Statistics 24.

Results

Sexting prevalence

In order to obtain the global prevalence of sexting, people were considered who answered a different alternative from "I do not sext" on the question "on average, I sext with ..." from the questionnaire by Dir et al. (2013). These were the participants who reported sending or receiving sexual content with dates, acquaintances who attract them, or people with whom they have a steady relationship. The global results show that 24.6 % of Spanish adolescents and 41.5 % of Mexicans have engaged in sexting at some time, and these differences were statistically significant ($\chi^2 = 14.924$; $p < .001$). At a more in-depth level of analysis, results show that Mexican adolescents send (22.5 % vs. 35.9 %; $p < .001$) and receive (63 % vs. 71.4 %; $p = .004$) more material of a sexual nature, and they refer to spreading more sexual content through social networks (11.8 % vs. 4.9 %; $p < .001$).

According to the specified age ranges, as a whole results show a sexting prevalence of 13.5 % at 15–18 years old and of 39.3 % at 12–14 years ($\chi^2 = 28.940$; $p = .000$). Mexican men between 15–18 years old practice more sexting than Spanish men, and these differences are statistically significant (54 % vs. 27.3 %; $p < .001$). Likewise, from 12–14 years old, both Mexican men (30.4 %) and women (19.4 %) report more sexting behaviors than Spanish men and women (8.3 % and 4.7 %, respectively). Regardless of their nationality or gender, most adolescents aged 12–14 perform this behavior with acquaintances who attract them, whereas most adolescents from 15–18 years old engage in sexting with their steady partner (Table 2).

Table 2
Sexting prevalence by age, gender, and country.

	Sexting		Cramer's Phi	Acquaintances	Dates	Steady partner
	Yes	χ^2				
Between 12–14 years old						
Men (Spain)	8.3 %	4.870*	0.027	100%	0%	0%
Men (Mexico)	30.4 %			57.1 %	0%	42.9 %
Women (Spain)	4.7 %	4.039*	0.044	50 %	0%	50 %
Women (Mexico)	19.4 %			80 %	0%	20 %
Between 15–18 years old						
Men (Spain)	27.3 %	10.353***	0.272	19.1%	9.5 %	71.4 %
Men (Mexico)	54 %			32.4 %	29.4 %	38.2 %
Women (Spain)	36.1 %	1.038	0.083	10.6%	2.6 %	86.8 %
Women (Mexico)	43.4 %			22.2 %	19.4 %	58.4 %

Note: * $p < 0.05$; *** $p < .001$.

Predictor variables of sexting behavior

As Table 3 reveals, the results of the first block of the hierarchical multiple regression analysis show that, of all the variables introduced, only the age, having a steady partner, attitudes towards sexting, and self-esteem are significant predictors of the sexting practice. This model is significant ($F = 162.723$; $p < .001$) and explains 45.7 % of the variance in the dependent variable. In the second block of the hierarchical analysis, the interactions between significant demographic variables (age and steady partner) and the rest of the variables included in the previous block were analyzed. These results reveal that, in addition to country, age, and attitudes towards sexting, the effect of the interaction between having a steady partner and the country is also a significant predictor of sending and/or receiving sexual material. This model is significant ($F = 174.990$; $p < .001$) and explains 48.4 % of the variance in the dependent variable.

According to the model obtained, the country, in this case Mexico, can be considered a predictor of sexting behavior ($\beta = 5.356$; $p = .036$). Second, the act of sending and receiving sexual material increases progressively with age, reaching its highest peak at 18 years old ($\beta = 10.205$; $p < .001$). Moreover, adolescents with more favorable and permissive attitudes towards sexting perform this behavior the most ($\beta = 33.799$; $p < .001$). Finally, the interaction between the country and maintaining a steady relationship (Fig. 1) reveals that, in Spain, adolescents who have a steady partner practice much more sexting than adolescents who do not have one (44.9 % vs.16.1 %; $p < .001$). By contrast, the practice of sexting in Mexico does not differ significantly between adolescents who have a steady partner and those who do not (46.4 % vs. 38.1 %; $p = .238$).

Reasons for sexting

Mexican adolescents between 12–14 years old show higher percentages on all the reasons for sexting, compared to Spanish adolescents, and all these differences are statistically significant. The reasons cited most by Mexican adolescents are: “boredom” (27.5 %), “because the partner requests it” (24.5 %), and “to establish intimacy with the partner” (16.7 %). Significant differences were also found when considering adolescents aged 15–18. Although all the reasons considered score also higher in Mexican partici-

Table 3
Multiple regression logistic analysis.

	B	ET	β	R^2	F		
<i>Block 1</i>							
Gender (Women)	0.331	0.272	1.487	0.457	162.723***		
Country (Mexico)	0.135	0.272	0.246				
Age	0.314	0.077	16.612***				
Steady Partner (Yes)	0.672	0.270	6.212*				
Sexting attitudes	0.133	0.017	59.262***				
Impulsivity	0.038	0.021	3.159				
Self-esteem	0.051	0.025	4.090*				
<i>Block 2</i>							
Gender (Women)	0.574	0.368	2.437			0.484	174.990***
Country (Mexico)	0.824	0.356	5.356*				
Age	0.329	0.103	10.205***				
Steady Partner (Yes)	4.917	3.722	1.745				
Sexting attitudes	0.136	0.023	33.799***				
Impulsivity	0.031	0.026	1.379				
Self-esteem	0.065	0.035	3.502				
Steady partner x country	-1.844	0.591	9.732**				

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < .001$.

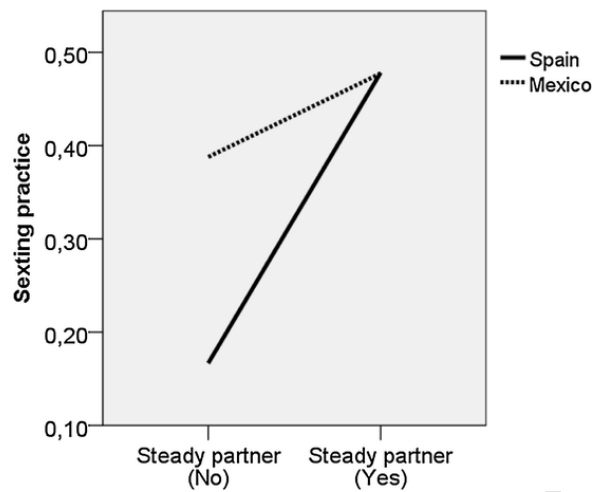


Fig. 1. Nationality moderating the association between steady partner and sexting practice probability.

pants, the differences were only statistically significant on four of them: “just because yes” ($p = .035$), “to establish intimacy with the partner” ($p = .012$), “boredom” ($p < .001$), and “feeling alone” ($p = .036$) (Table 4).

Attitudes towards the practice of sexting

With regard to the adolescents’ attitudes towards sexting, significant differences were found between Spanish and Mexican participants aged 12–14 ($t = -4.845$; $p < .001$), with more favorable attitudes towards sexting in Mexicans ($M = 32.02$; $SD = 11.53$) compared to Spaniards ($M = 23.70$; $SD = 7.95$) (Table 5). Furthermore, only six of the fourteen items were statistically significant, with higher scores for Mexican adolescents. Particularly, the items “I think sexting may cause me problems in the future” ($p < .001$) and “You have to be careful about sexting” ($p < .001$) are the attitudes with the greatest statistical differences. Likewise, at a lower level of statistical significance ($p > 0.05$) differences have also been found on items such as “There is no harm in sexting”, “Sexting is fun”, and “Sexting is exciting”.

When analyzing participants aged 15–18, statistically significant differences were also found ($t = -3.848$; $p < .001$) in favor of Mexicans (Table 5). Again, seven of the fourteen items reached statistical significance. The items on which Mexican teenagers showed the highest significant differences were “There is no harm in sexting” ($p < .001$) and “Sexting is exciting” ($p < .001$). At a lower level of statistical significance ($p < .01$) differences appeared on items such as “Sexting is no big deal” and others referred to relational expectations (“My romantic partners expect me to send sexually racy texts” and “Sexting improves my relationship”).

Table 4

Differences in the reasons for sexting by age and country.

	12–14 years			15–18 years		
	Spain (%)	Mexico (%)	χ^2	Spain (%)	Mexico (%)	χ^2
To Show off	2.6 %	13.2 %	5.381*	8.8 %	14 %	1.863
Just because (no specific reason)	5.2 %	16.3 %	4.306*	20.9 %	31.4 %	3.819*
Because the partner asks for it	3.9 %	24.5 %	12.382***	27.2 %	34.4 %	1.638
To establish intimacy with the partner	2.6 %	16.7 %	8.168**	26.4 %	40.8 %	6.302*
Boredom	5.2 %	27.5 %	12.575***	10.9 %	33.3 %	20.088***
Feeling alone	0%	15.7 %	12.884***	6.1 %	13.3 %	4.048*
Being under the influence of drugs	0%	8 %	6.360*	5.4 %	8.4 %	0.914
Wanting to be like friends	5.2 %	15.7 %	3.975*	4.1 %	5.8 %	0.421
To avoid an argument	3.9 %	13.7 %	4.116*	5.6 %	9.3 %	1.368
Because interesting people do it	2.6 %	16.3 %	7.725**	1.4 %	4.2 %	2.044

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < .001$.

Table 5
Differences in the attitudes towards sexting by age and country.

	12–14 years			15–18 years		
	Spain M(SD)	Mexico M(SD)	t	Spain M(SD)	Mexico M(SD)	t
1.Sexting is just part of flirting	2.45 (1.76)	2.90 (2.08)	-1.357	2.58 (1.58)	2.69 (1.44)	-0.655
2.There is no harm in sexting	1.49 (1.25)	2.01 (1.67)	-2.068*	2.23 (1.56)	2.93 (1.56)	-4.086***
3.Sexting is fun	1.36 (0.90)	1.90 (1.55)	-2.539*	2.60 (1.60)	3.14 (1.59)	-3.049**
4.Sexting is exciting	1.55 (1.10)	2.15 (1.66)	-2.566*	2.72 (1.66)	3.39 (1.69)	-3.638***
5.Sexting is a regular part of romantic relationships	2.30 (1.72)	2.63 (1.91)	-1.050	2.93 (1.66)	3.22 (1.65)	-1.544
6.Sexting is no big deal	2.25 (1.89)	2.78 (1.95)	-1.590	3.22 (1.77)	3.74 (1.66)	-2.751**
7.I think sexting may cause me problems in the future*	1.67 (1.36)	2.93 (2.22)	-4.090***	1.87 (1.55)	2.10 (1.51)	-1.380
8.Sending sexually suggestive texts is risky*	1.69 (1.32)	2.69 (2.12)	-3.396**	1.97 (1.46)	1.97 (1.36)	0.044
9.Sending sexually racy pictures leaves me vulnerable*	2.83 (2.26)	3.30 (2.29)	-1.191	1.95 (1.60)	2.07 (1.50)	-0.727
10.You have to be careful about sexting*	1.26 (1.01)	2.50 (2.05)	-4.650***	1.28 (0.91)	1.57 (1.18)	-2.568*
11.I share the sexts I receive with my friends	1.29 (1.02)	1.67 (1.41)	-1.826	1.67 (1.43)	1.64 (1.30)	0.232
12.I share the sexts I send with my friends	1.42 (1.26)	1.46 (1.09)	-0.199	1.32 (1.05)	1.33 (.86)	-0.113
13.My romantic partners expect me to send sexually racy texts	1.37 (1.13)	1.53 (1.30)	-0.805	1.60 (1.26)	2.07 (1.51)	-3.047**
14.Sexting improves my relationship or possible relationship	1.33 (0.90)	1.55 (1.23)	-1.223	1.82 (1.35)	2.15 (1.36)	-2.227**
TOTAL	23.70 (7.95)	32.02 (11.53)	-4.845***	29.66 (10.36)	33.88 (9.08)	-3.848***

Note: *p < 0.05; **p < 0.01; ***p < .001.

*These items had their scoring reversed to obtain the total score. A higher score indicates a lower perception of risk.

Discussion

This study underlines the importance of taking into account cultural variables in addition to demographic and psychological differences.

The findings related to the psychological variables reveal that impulsivity and self-esteem are not significant predictors of sexting. In relation to self-esteem, our results are consistent with previous research (Gamez-Guadix & de Santisteban, 2018), although our findings on impulsivity differ from those studies that have shown the relationship between sexting and a low capacity for self-control (Dir et al., 2013; Kerstens & Stol, 2014).

Another level of analysis, which refers to sociodemographic variables (age and gender) supports that these variables have been mediated by cultural factors but in general the probability of engaging in sexting behavior increases with age. Nevertheless, gender is not a significant predictor of sexting, which is consistent with the mixed results found in the literature. The relevance of these variables will be evident again when addressing our results on the differences in the prevalence of sexting.

Regarding cultural differences, our findings support the existence of differences in the practice of sexting, between countries that share some cultural values, such as Hispanic countries. Spanish and Mexican adolescents show differences not only in the prevalence of sexting, but also in the attitudes and the reasons for it.

Regarding sexting's prevalence, our study reveals high overall rates in both Spanish and Mexican adolescents (24.6 %–41.5 %), in line with other international studies (Gil-Llario et al., 2018; Madigan et al., 2018; Velázquez-Reyes, 2015). Although the prevalence is high in both groups of participants, Mexican rates are significantly more alarming in terms of sending and receiving sexts and spreading sexual content through social networks.

One of the important disparities in sexual behavior across different cultures is the age of sexual debut, which is earlier in Mexican adolescents than in Spaniards (Barragán et al., 2019; Castro et al., 2011). This fact could be related to the higher prevalence of sexting in Mexican adolescents, to the extent that adolescents who sext are more likely to engage in sexual relationships earlier (Temple & Choi, 2014). Moreover, our study reveals a higher prevalence in older adolescents, regardless of their gender and country, according to several studies that confirm this increasing trend with age (Cooper et al., 2016; Gámez-Guadix et al., 2017; Gregg et al., 2018; Klettke et al., 2014; Madigan et al., 2018).

In the case of gender, this variable was initially considered relevant, although inconsistent findings on gender differences in sexting rates have been reported (Marganski, 2017). There seems to be a consensus that women send sexual content at higher rates than males (Gil-Llario et al., 2018; Klettke et al., 2014; Smith-Darden et al., 2017; Van Ouytsel et al., 2015), but there is no agreement about gender differences in total sexting rates (Marganski, 2017), as we also found in our study. Another relevant detail is that Mexican men show more sexting behaviors than Spanish men in both age ranges. These findings may be explained by the different GII observed in Spain and Mexico (UNDP, 2018), as well as by the prevailing sexist attitudes in each country (Bringas-Molleda et al., 2017). However, Mexican women report more sexting than Spanish women only at earlier ages, which again may be related to an earlier onset of sexual relations in their context (Barragán et al., 2019; Castro et al., 2011).

Regarding the reasons for sexting, data reveal cultural differences that are more marked in 12–14 years old teenagers. In this age group, the main reasons for engaging in sexting for Mexican adolescents are boredom, the partner's request, and the wish to in-

crease intimacy. These motivations for sexting are consistent with those found previously in other Latin countries such as Colombia (Gil-Llario, Morell-Mengual, Jiménez-Martínez et al., 2020), and specially with those authors who report wanting to increase the degree of intimacy with one's partner and receiving an express request from the partner as the main motives for sexting (Bianchi et al., 2019; Gil-Llario, Morell-Mengual, Giménez-García et al., 2020). It is also necessary to take into account that the differences found between both countries at the age of 12–14 years may be related to the fact of having or not a partner, since at these early ages much more Mexican adolescents have a steady partner compared to Spaniards, which in turn would also be related to the age of sexual onset of each context (Barragán et al., 2019; Castro et al., 2011).

With regard to attitudes towards sexting, in general Mexican adolescents show more favorable and permissive attitudes than Spanish adolescents, as it has been shown in a study carried out with Colombian adolescents (Gil-Llario, Morell-Mengual, Jiménez-Martínez et al., 2020). Our study reveals these more permissive attitudes as relevant variables influencing sexting. As it was mentioned above, this predominance of positive attitudes among Mexicans may be associated with the high rates of sexting observed in this country, according to other authors that have also stated that the more positive the attitudes towards sexting, the more sexting behaviors are conducted (Hudson & Marshall, 2018; Walrave et al., 2014). Mexicans consider sexting to be more fun, exciting, and unrelated to harm than Spaniards. Nevertheless, Mexican adolescents also show in some way perception of risk regarding sexting, in line with the ambivalent attitudes towards sexting confirmed in other international studies, (Rodríguez-Castro et al., 2017; Wood et al., 2015). These data are relevant, but we must not lose sight of the fact that as a whole the attitudes they show are more positive.

Some limitations should be noted in relation to these results. First, our study, as in other cases, suffers from the desirability effects associated with studies that are based on self-reported questionnaires. Likewise, in this study, a cross-sectional design was used, but future research should consider the use of longitudinal designs to analyze whether sexting behaviors are maintained over time, and especially if they have consequences for the sexual health of young people and adults who practiced sexting during their adolescence.

Regardless of these limitations, our findings can be considered relevant because they increase the knowledge about the importance of cultural variables as mediators regarding the age of onset and the implications of sexting. This information is both valuable and necessary in order to implement differential preventive strategies according to each culture. As stated in our results, although Spanish and Mexican adolescents have a high risk of sexting behaviors, the socio-cultural characteristics of each country are of special importance, as well as the age and the positive attitudes towards this phenomenon. All of these variables have to be taken into consideration when designing specific preventive strategies for each culture.

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Declaration of Competing Interest

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