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Prevalence and profile of sexting among adolescents in Ecuador

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ABSTRACT

Sexting is an emergent phenomenon in adolescents that has been studied in the USA and Europe, but scarcely in Latin American countries. This study examined the psychometric properties of an instrument to measure sexting and analyzed the prevalence, correlators, and profile of sexting among Ecuadorian adolescents. Participants were 664 students aged between 12 and 18 years ($M = 14.6$, $SD = 1.74$) who completed a battery of questionnaires. Results showed a higher prevalence of passive sexting (18.5%–22.3%) than of active sexting (3.5%–18.5%). Sexting was not related to socioeconomic status, but was more prevalent among boys, late and middle adolescents, and those in a romantic relationship. In these groups, wanting to have sex was the main motivation for sexting, whereas joking with people was the main reason endorsed by girls and early adolescents. Those adolescents who scored higher on active sexting were more likely to sext with someone regarded as attractive and more likely to endorse wanting to have sex or dating as the motivation for sexting. The findings suggest that sexting is a way of expressing sexuality and that it is related to romantic interaction. The results are discussed in relation to preventing possible risks and negative consequences of sexting.

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Introduction

The use of technology has modified human interactions and most adolescents nowadays use information and communication technology (ICT) to relate to their peers. Indeed, teenagers are considered 'digital natives' (Prensky 2001) who construct their identity and their spaces of sociability through the use of technology (Menjívar Ochoa 2010).

Adolescence marks the developmental transition from childhood to adulthood and it is a period characterized by risk taking, self-exploration, and sexual curiosity (Korenis and Billick 2014). A central issue in adolescence is increasing independence from parents (Ling 2004, 2005) and the strengthening of relationships with peers, who often begin to have more influence than parents on attitudes and activities (Brown and Larson 2009). This greater independence has been associated with ICT, since the use of cell phones, internet, or social networking sites offers adolescents more privacy and control over their own lives and the opportunity to connect freely with their peers (Campbell and

Park 2014; Döring 2014; Lehdonvirta and Räsänen 2011; Ling 2005). However, although the use of ICT increases and facilitates social connectedness, its misuse can also have negative consequences for social behavior. For today's adolescents these include problematic internet use, cyberbullying, and sexting, which often have health and legal implications (Gómez et al. 2017; Kopecký 2012; Sadhir, Stockburger, and Omar 2016).

Sexting refers to the exchange of sexually explicit messages, images, or photos through electronic means (Klettke, Hallford, and Mellor 2014). Passive sexting involves receiving, asking for, or being asked for sexually explicit material, while active sexting is the creating, showing, posting, sending, or forwarding of such material (Barrense-Dias et al. 2017; Temple and Choi 2014).

The majority of studies about sexting have been carried out in the USA and Europe. Barrense-Dias et al. (2017), in a review of research from 2012 to 2015, found that the prevalence of passive sexting ranged widely from 7.1% to 60%, depending on how sexting was defined, the questions used to assess it, and the characteristics of the sample. In another review of research conducted between 2010 and 2013, Klettke, Hallford, and Mellor (2014) found a mean prevalence of 15.64% for receiving a text or photo with sexually suggestive content. As regards active sexting, prevalence ranged from 2.5% to 27.6% (Barrense-Dias et al. 2017), with a mean across studies of 10.2% (Klettke, Hallford, and Mellor 2014) for sending sexts containing a text or photo. Only one study has reported data on sexting among adolescents in a Latin American country: West et al. (2014) found that 20% of Peruvian adolescents were involved in sexting, both passive and active.

The prevalence of sexting may be linked to several sociodemographic variables such as gender, age, and ethnicity. The results regarding gender are controversial, which could be due to the different research methodologies used to assess sexting (Gámez-Guadix, De Santisteban, and Resett 2017). Some authors found that girls were more involved than boys in sexting (Mitchell et al. 2012; Ybarra and Mitchell 2014), whereas the opposite was reported by other studies in the USA (Fleschler et al. 2013; Strassberg, Cann, and Velarde 2017; Temple et al. 2012) and Europe (Baumgartner et al. 2014; Morelli et al. 2016a; Van Ouytsel et al. 2014). The study in Peru (West et al. 2014) also found that boys reported higher rates of sexting than did girls (35.17% vs. 13.19%). It is generally agreed, however, that the consequences of sexting seem to be worse for girls, who receive more negative judgments from peers than do boys (Lippman and Campbell 2014; Livingstone and Görzig 2014; Ringrose and Harvey 2015; Walrave, Heirman, and Hallam 2014).

With regard to sexting and age, the empirical evidence is more consistent and shows that the behavior is more prevalent among older adolescents (Baumgartner et al. 2014; Dake, Price, and Maziarz 2012; Gámez-Guadix, De Santisteban, and Resett 2017; Lenhart 2009; Lenhart et al. 2010; Lippman and Campbell 2014; Mitchell et al. 2012; Morelli et al. 2016b; Rice et al. 2012, 2014; Ybarra and Mitchell 2014). In Spain, for example, the prevalence of active sexting increased from 3.4% at 12 years of age to 36.1% at 17, the association with age showing a growing and significant linear trend (Gámez-Guadix, De Santisteban, and Resett 2017).

Finally, some studies found an association between ethnicity and sexting (Barrense-Dias et al. 2017), which in the USA appears to be more prevalent among the Black, African, Hispanic, and Latino populations (Cooper et al. 2016; Dake, Price, and Maziarz 2012; Houck et al. 2014; Rice et al. 2012, 2014; Ybarra and Mitchell 2014). To our knowledge, however, there is no empirical evidence regarding the relationship between sexting and socioeconomic status.

Some authors have suggested that sexting may be a way of exploring sexuality, of expressing sexual interest and sharing intimacy with peers (Lippman and Campbell 2014; Temple and Choi 2014; Van Ouytsel et al. 2016; Van Ouytsel, Ponnet, and Walrave 2014). In this context, it has been related to dating behavior and norms for romantic relationships (Albury and Crawford 2012; Kopecký 2012; Lippman and Campbell 2014; Ševčíková 2016; Strassberg, Rullo, and Mackaronis 2014; Van Ouytsel et al. 2016). Indeed, sexting is used for romantic interaction or flirting (Cooper et al. 2016; Döring 2014) and it occurs mainly in a romantic and/or sexual relational context (Barrense-Dias et al. 2017; Kopecký 2012, 2015; Lippman and Campbell 2014; Van Ouytsel et al. 2016). Drouin et al. (2013) found that the main motivations for sexting were the wish to flirt or to initiate a sexual relationship, and because a partner asked you to do it. Apart from its relational purpose, sexting can also be used as a joke, this being the reason that tends to be endorsed by younger adolescents (Korenis and Billick 2014; Lippman and Campbell 2014).

As noted earlier, most of the published data come from studies conducted in the USA and Europe, and little is known about the prevalence and profile of sexting among adolescents in Latin American countries. In Ecuador, for instance, there have been no formal studies of sexting. Consequently, the aim of this study was to analyze the prevalence, correlators, and profile of sexting among Ecuadorian adolescents in order to compare the findings with those reported for other countries. To this end, we used the Sexting Behavior Scale (Chacón-López et al. 2016) to measure active and passive sexting.

As the Sexting Behavior Scale has not been validated with Ecuadorian adolescents we began by examining its psychometric properties in this population. Specifically, we examined its internal consistency and used confirmatory factor analysis to test the proposed structure of two related factors (passive and active sexting). We then applied the scale in order to obtain data regarding the prevalence of sexting in Ecuador, the nature of the relationship to the person sexted, and the motivation for sexting as a function of gender, stage of adolescence, and being in a romantic relationship. Based on previous research, we expected to find a higher prevalence for boys, for older adolescents, and for those with a romantic partner. We also examined the association between sexting and socioeconomic status, a relationship that has not been studied previously.

Finally, we conducted a hierarchical multiple regression analysis in order to identify the best predictors of the active sexting score. In this analysis, the nature of the relationship to the person sexted and the motivation for sexting were entered as potential predictors, after controlling for sociodemographic variables. Passive sexting scores were also considered in order to control for the overlap with active sexting.

Materials and methods

Participants

Participants were 664 students aged between 12 and 18 years ($M = 14.6$, $SD = 1.74$) who were recruited from five schools in the metropolitan area of Quito, Ecuador. Although the schools were selected by convenience, they were located in different city districts of different socioeconomic status. In addition, participant classes within them were chosen randomly. The parents or legal guardians of the students (age range 22–71 years; $M = 42.35$, $SD = 7.03$) also took part in the study. The inclusion criteria for adolescents were:

Table 1. Sociodemographic characteristics of participants.

Participants	N	Percentage
Adolescents		
Gender		
Male	376	56.6
Female	288	43.4
Stage of adolescence		
Early (12–13 years)	209	31.5
Middle (14–16 years)	333	50.2
Late (17–18 years)	122	18.4
Having a partner		
No	362	54.5
Yes	302	45.5
Having a cell phone		
No	97	14.6
Yes	567	85.4
Internet use		
No	3	0.5
Yes	661	99.5
Parent/legal guardian		
Gender		
Male	202	30.4
Female	462	69.6
Relationship		
Mother	452	68.1
Father	198	29.8
Other relative	14	2.1
Marital status		
Married	500	75.3
Divorced or separated	142	21.4
Widowed	13	2.0
Single	9	1.3
Socioeconomic status		
Low	90	13.6
Medium	276	41.6
High	298	44.9
Ethnicity		
Mestizo	598	90.1
White	27	4.1
Other	39	5.8

(1) age between 12 and 18 years, (2) Spanish as their mother tongue, (3) not having a psychological problem recognized by the school, and (4) informed consent for participation signed by their parents/legal guardians. Table 1 shows the sociodemographic characteristics of the sample.

Measures

Sociodemographic questionnaire

The adolescents completed a questionnaire that gathered information about gender, age, romantic relationships, and use of technology.

Sexting behavior

Sexting behavior was assessed using nine items from the Sexting Behavior Scale (SBS), developed by Chacón-López et al. (2016) and based on Dir (2012). These items refer to the frequency of active and passive sexting using a cell phone or social networking

Table 2. Standardized factor loadings (CFA) and *R*-squared for the two-related-factors model of the Sexting Behavior Scale (*N* = 664).

Items	Factor loading	<i>R</i> ²
<i>Passive sexting</i>		
1. How often have you received text messages with sexual content on your cell phone?	.88	.77
2. How often have you received images with sexual content on your cell phone?	.91	.84
3. How often have you received texts or images with sexual content through the internet (social networking sites, email, etc.)?	.82	.68
<i>Active sexting</i>		
4. How often have you responded to text messages with sexual content that you've received on your cell phone?	.82	.67
5. How often have you responded to images with sexual content that you've received on your cell phone?	.84	.71
6. How often have you sent text messages with sexual content using your cell phone?	.92	.85
7. How often have you sent images with sexual content using your cell phone?	.90	.80
8. How often have you sent texts or images with sexual content over the internet (social networking sites, email, etc.)?	.85	.71
9. How often have you posted images with sexual content on Facebook, Tuenti, or other social networking sites?	.55	.31

sites (Table 2), and each one is rated on a 5-point Likert scale from 0 to 4 (never; rarely; sometimes/several times a month; often/several times a week; frequently/daily).

Relationship to the person sexted

The relationship to the person sexted was assessed with a further three items from the SBS: I sext with my boyfriend/girlfriend; I sext with people I'm attracted to; I sext with my friends. Each of these items is rated on a 5-point Likert scale from 0 to 4 (never; rarely; sometimes/several times a month; often/several times a week; frequently/daily).

Motivation for sexting

The motivation for sexting was assessed with five items from the SBS: I sext because I want to have sex; I sext because I want to start dating someone; I sext because I want to talk to someone; I sext because I want to joke with people; Sexting increases your chances of having sex with or dating someone. Each of these items is rated from 0 (not at all true) to 4 (entirely true).

Socioeconomic status (SES)

The adolescents' parents/legal guardians completed the Survey of Socioeconomic Stratification (SSES), a public-access instrument designed by Ecuador's National Institute of Statistics and Census (INEC 2011a). The survey contains 25 items covering six areas (type of housing, access to technology, household possessions, consumer habits, education, and household economic activity). Socioeconomic status was determined by the score obtained on the SSES and classified, in accordance with INEC (2011b) criteria, as low (score between 0 and 316), medium-low (316–535), medium (535–696), medium-high (696–845), and high (845–1000).

Procedure

The Ministry of Education in Ecuador and the principal of each school or college supervised and approved the carrying out and ethical aspects of this research. Signed informed

consent was obtained from the adolescents' parents/legal guardians, who completed the SSES at home. Adolescents completed the sociodemographic questionnaire and the SBS in a single session held during normal class time and with their teacher and a psychologist present.

Data analysis

In order to analyze the psychometric properties of the SBS items used to assess sexting we conducted a confirmatory factor analysis (CFA) with EQS 6.3 software, testing a structure of two related factors: passive and active sexting. Analyses were performed on the polychoric correlation matrix, using the maximum likelihood and robust estimation methods. We computed the Satorra-Bentler chi-square (χ^2_{S-B}) with the following goodness-of-fit indices (Bentler 2006): the comparative fit index (CFI), the non-normed fit index (NNFI), and the root mean square error of approximation (RMSEA). Values of the CFI and NNFI close to .95 are indicative of a good fit (Hu and Bentler 1999). Values of the RMSEA below .06 indicate a good fit (Hu and Bentler 1999) and those less than .08 a reasonable fit (Browne and Cudeck 1993). In addition to CFA, we examined internal consistency for each factor by computing the Cronbach's alpha coefficient, considering values greater than .70 as acceptable (Shultz and Whitney 2005).

Next, we examined the prevalence of passive and active sexting, the nature of the relationship to the person sexted, and the motivation for sexting according to gender, the stage of adolescence, SES, and being in a romantic relationship. In order to analyze the prevalence of these aspects we considered endorsements of response options 2, 3, or 4 (i.e. sometimes; often; daily) for each question. Regarding the stage of adolescence, the sample was divided into three groups in accordance with the categories used by the World Health Organization (2014): early (12–13 years), middle (14–16 years), and late (17–18 years) adolescence. The data for SES were collapsed into three levels (low, medium, and high) to facilitate comparison between them.

Finally, we performed a hierarchical multiple regression analysis in order to identify the best predictors of active sexting, taking the score on active sexting as the dependent variable. Potential predictors were introduced in four stages as follows: 1) sociodemographic variables; 2) passive sexting scores, in order to control for the overlap with active sexting; 3) nature of the relationship to the person sexted; and 4) motivation for sexting. Passive and active sexting scores were calculated by summing scores for the items that loaded on each factor (rated from 0 to 4), based on the results of the CFA.

Results

Psychometric properties of the sexting behavior scale

The goodness-of-fit indices obtained in the CFA were inside the bounds for a good fit of the two-related-factors structure, S-B χ^2 (26) = 92.17, CFI = .99, NNFI = .99, and RMSEA = .062 CI [.048–0.076]. Values of the CFI and NNFI were higher than .95 and the RMSEA was close to .06. Table 2 shows the corresponding factor loadings for active and passive sexting, all of which were statistically significant. The correlation between the two factors was .87.

The Cronbach's alpha coefficients for scores on passive sexting and active sexting were, respectively, .86 and .85. Both values can be considered satisfactory.

Table 3. Prevalence of sexting behavior by gender.

Sexting behavior	Total	Female	Male	χ^2	<i>p</i>
<i>Passive sexting via cell phone</i>					
Receive text with sexual content	20.0	13.5	25.0	13.37	<.01
Receive images with sexual content	18.5	8.0	26.6	37.42	<.01
<i>Passive sexting via social networking sites</i>					
Receive text/images with sexual content	22.3	14.9	27.9	15.90	<.01
<i>Active sexting via cell phone</i>					
Respond to text with sexual content	18.5	6.6	27.7	47.93	<.01
Respond to images with sexual content	11.7	4.5	17.3	25.70	<.01
Send text with sexual content	7.8	3.1	11.4	15.61	<.01
Send images with sexual content	6.8	2.8	9.8	12.90	<.01
<i>Active sexting via social networking sites</i>					
Send text/images with sexual content	6.0	2.1	9.0	13.95	<.01
Post images with sexual content	3.5	3.1	3.7	0.18	.68
<i>Relationship to person sexted</i>					
Boyfriend/girlfriend	5.4	2.1	8.0	11.05	.01
Someone I'm attracted to	4.4	1.0	6.9	13.47	<.01
Friend	1.7	0.0	2.9	8.58	<.01
<i>Motivation for sexting</i>					
Wanting to have sex	11.3	3.1	17.6	33.89	<.01
Wanting to date someone	6.6	1.4	10.6	22.55	<.01
Wanting to talk to someone	5.3	1.7	8.0	12.73	<.01
Joking with people	9.9	5.6	13.3	10.92	<.01
Sexting increases your chances of having sex with or dating someone	15.4	7.7	21.3	23.16	<.01
<i>N</i>	664	288	376		

Prevalence of sexting

Tables 3–6 show the prevalence of sexting, the nature of the relationship to the person sexted, and the motivation for sexting according to gender, stage of adolescence, SES, and being in a romantic relationship. Table 3 also shows the total prevalence.

Table 4. Prevalence of sexting behavior by stage of adolescence.

Sexting behavior	Early	Middle	Late	χ^2	<i>p</i>
<i>Passive sexting via cell phone</i>					
Receive text with sexual content	5.3	24.6	32.8	45.24	<.01
Receive images with sexual content	5.7	22.8	28.7	35.01	<.01
<i>Passive sexting via social networking sites</i>					
Receive text/images with sexual content	10.5	24.9	35.2	29.86	<.01
<i>Active sexting via cell phone</i>					
Respond to text with sexual content	6.7	21.9	29.5	31.67	<.01
Respond to images with sexual content	5.3	12.9	19.7	16.30	<.01
Send text with sexual content	2.4	9.3	13.1	14.29	<.01
Send images with sexual content	1.9	8.4	10.7	12.13	<.01
<i>Active sexting via social networking sites</i>					
Send text/images with sexual content	2.4	6.6	10.7	9.69	<.01
Post images with sexual content	2.4	3.3	5.7	2.63	.27
<i>Relationship to person sexted</i>					
Boyfriend/girlfriend	0.5	4.8	15.6	34.73	<.01
Someone I'm attracted to	1.4	5.4	6.6	6.56	<.04
Friend	0.0	2.4	2.5	5.14	.08
<i>Motivation for sexting</i>					
Wanting to have sex	1.0	12.6	25.4	47.13	<.01
Wanting to date someone	1.4	7.8	12.3	16.19	<.01
Wanting to talk to someone	1.4	6.6	8.2	9.44	<.01
Joking with people	4.3	11.7	14.8	11.74	<.01
Sexting increases your chances of having sex with or dating someone	7.7	17.5	23.0	16.07	<.01
<i>N</i>	209	333	122		

Note: Early adolescence: 12–13 years; middle adolescence: 14–16 years; late adolescence: 17–18 years.

Table 5. Prevalence of sexting behavior by socioeconomic status.

Sexting behavior	Low	Medium	High	χ^2	<i>p</i>
<i>Passive sexting via cell phone</i>					
Receive text with sexual content	13.3	20.3	21.8	3.12	.21
Receive images with sexual content	11.1	21.4	18.1	4.80	.91
<i>Passive sexting via social networking sites</i>					
Receive text/images with sexual content	14.4	27.2	20.1	7.80	.02
<i>Active sexting via cell phone</i>					
Respond to text with sexual content	11.1	20.7	18.8	4.12	.13
Respond to images with sexual content	6.7	12.7	12.4	2.60	.27
Send text with sexual content	6.7	7.6	8.4	0.32	.85
Send images with sexual content	6.7	6.9	6.7	0.01	.99
<i>Active sexting via social networking sites</i>					
Send text/images with sexual content	4.4	5.4	7.0	1.12	.57
Post images with sexual content	4.4	2.5	4.0	1.25	.54
<i>Relationship to person sexted</i>					
Boyfriend/girlfriend	3.3	5.1	6.4	1.36	.51
Someone I'm attracted to	2.2	2.9	6.4	5.30	.07
Friend	0.0	1.1	2.7	3.99	.14
<i>Motivation for sexting</i>					
Wanting to have sex	4.4	13.0	11.7	5.12	.77
Wanting to date someone	5.6	7.6	6.0	0.76	.68
Wanting to talk to someone	2.2	8.3	3.4	9.05	.01
Joking with people	5.6	9.4	11.7	3.10	.22
Sexting increases your chances of having sex with or dating someone	8.9	14.9	17.8	4.36	.11
<i>N</i>	90	276	298		

The prevalence for passive sexting ranged between 18.5% and 22.3%, while for active sexting the range was 3.5%–18.5%. The use of social networking sites was more common for passive sexting, and text messages were sent more frequently than images. The lowest prevalence corresponded to posting images. Overall, sexting behavior did not differ according to whether the adolescent's family was of low, medium, or high SES.

Table 6. Prevalence of sexting behavior by romantic relationship status.

Sexting behavior	No partner	Partner	χ^2	<i>p</i>
<i>Passive sexting via cell phone</i>				
Receive text with sexual content	13.0	28.5	24.67	<.01
Receive images with sexual content	13.5	24.5	13.12	<.01
<i>Passive sexting via social networking sites</i>				
Receive text/images with sexual content	17.4	28.1	10.97	<.01
<i>Active sexting via cell phone</i>				
Respond to text with sexual content	13.8	24.2	11.71	<.01
Respond to images with sexual content	8.6	15.6	7.78	<.01
Send text with sexual content	6.9	8.9	0.94	.33
Send images with sexual content	5.5	8.3	1.98	.16
<i>Active sexting via social networking sites</i>				
Send text/images with sexual content	5.0	7.3	1.56	.21
Post images with sexual content	2.5	4.6	2.28	.13
<i>Relationship to person sexted</i>				
Boyfriend/girlfriend	1.9	9.6	18.88	<.01
Someone I'm attracted to	3.3	5.6	2.11	.15
Friend	1.7	1.7	0.01	.99
<i>Motivation for sexting</i>				
Wanting to have sex	7.7	15.6	10.07	<.01
Wanting to date someone	5.5	7.9	1.56	.21
Wanting to talk to someone	5.5	5.0	0.10	.75
Joking with people	9.1	10.9	0.60	.44
Sexting increases your chances of having sex with or dating someone	12.2	19.3	6.39	.01
<i>N</i>	362	302		

Boys were more involved than girls in both passive sexting (25%–27.9% vs. 8%–14.9%) and active sexting (3.7%–27.7% vs. 2.1%–6.6%), and some sexting behaviors were more common among adolescents with a romantic partner. Sexting became more common with age. The highest prevalence in the early, middle, and late stage, respectively, was 10.5%, 24.9%, and 35.2% for passive sexting and 6.7%, 21.9%, and 29.35% for active sexting.

The prevalence of sexting with friends was only 1.7%, rising to 4.4% for sexting with someone regarded as attractive and 5.4% with a romantic partner. Once again, prevalence was higher for boys and for older adolescents.

Wanting to have sex was the main motivation for sexting, followed by joking with people, wanting to date someone, and wanting to talk to someone. Wanting to have sex was more likely to be endorsed as the reason for sexting by boys, older adolescents, and those with a romantic partner. Finally, 15.4% of participants agreed with the idea that ‘sexting increases your chances of having sex with or dating someone’.

Prediction of active sexting

The four-stage hierarchical multiple regression was conducted with active sexting as the dependent variable. The results are shown in Table 7. The change in R² was statistically significant at all stages, indicating that sociodemographic variables, passive sexting, the nature of the relationship to the person sexted, and the motivation for sexting contributed to the prediction of active sexting. At stage one, all sociodemographic variables contributed significantly to the regression model. However, at stage four, with all variables added, gender was the only statistically significant sociodemographic variable. The results of the model at this stage (70% of the variance explained) showed that: males scored higher than females on active sexting; adolescents who received more texts or images with sexual content also tended to score higher on active sexting; and

Table 7. Standardized regression coefficients from hierarchical regression analysis, R-squared and increment in R-squared

Variables	Stage 1	Stage2	Stage 3	Stage 4	F	R ²	ΔR ²
Sociodemographic variables					22.29**	.15	.15**
Gender	0.26**	0.11**	0.06*	0.05*			
Age	0.21**	0.02	−0.02	−0.03			
SES. Low	−0.10**	−0.04	−0.01	−0.01			
Medium	−0.03	−0.04	−0.01	−0.01			
Having a partner	0.13**	0.01**	0.01	0.02			
Passive sexting		0.71**	.052**	0.51**	141.27**	.56	.42**
Relationship to person sexted					148.36**	.67	.11**
Boyfriend/girlfriend			0.12**	0.06			
Someone I’m attracted to			0.24**	0.15**			
Friend			0.12**	0.04			
Motivation for sexting					106.93**	.70	.03**
Wanting to have sex				0.14**			
Wanting to date someone				0.09*			
Wanting to talk to someone				0.03			
Joking with people				0.01			
Sexting increases your chances of having sex with or dating someone				0.04			

*p < .05.

**p < .01.

Note: Coding: Gender (1 – Male, 0 – Female); SES Low (1 – Low, 0 – Other); SES Medium (1 – Medium, 0 – Other); Having a partner (1 – Yes, 0 – No).

adolescents who more strongly endorsed 'I sext with people I'm attracted to', 'I sext because I want to have sex', and 'I sext because I want to start dating someone' also tended to score higher on active sexting.

Discussion

The aims of this study were to examine the psychometric properties of the Sexting Behavior Scale (Chacón-López et al. 2016) and to analyze in Ecuadorian adolescents the prevalence of passive and active sexting, the nature of the relationship to the person sexted, and the motivation for sexting as a function of gender, stage of adolescence, SES, and being in a romantic relationship. We also sought to determine the best predictors of the active sexting score by means of hierarchical multiple regression analysis, considering as predictors the nature of the relationship to the person sexted and the motivation for sexting, after controlling for sociodemographic variables and passive sexting.

Regarding the psychometric properties of the Sexting Behavior Scale, the results of the CFA confirmed the structure of two related factors, with values of the goodness-of-fit indices inside the bounds for an excellent fit. The two factors were identified as passive and active sexting. This structure is consistent from a theoretical point of view and enables the two types of sexting to be studied separately.

Our findings for the prevalence of sexting are similar to those reported in previous studies. The prevalence for passive sexting ranged from 18.5% to 22.3%, and for active sexting from 3.5% to 18.5%, both of which are slightly higher than the means reported by Klettke, Hallford, and Mellor (2014) for receiving (15.64%) and sending (10.2%) texts or photos. The study by West et al. (2014) in Peru reported a prevalence of 20% for passive and active sexting. The higher prevalence we observed for passive as opposed to active sexting is also consistent with previous research (Baumgartner et al. 2014; Klettke, Hallford, and Mellor 2014; Temple and Choi 2014). Active sexting implies a deliberate desire to make contact with others in this way, and it requires a greater level of involvement than does passive sexting.

Passive sexting was more likely to involve social networking sites than cell phones, probably because the majority of ICT users are exposed to these media, which facilitate open communication and enable content to be shared and forwarded with large numbers of people, thus increasing the probability of incidental exposure. Active sexting, by contrast, more commonly involved the use of a cell phone. This finding is consistent with the fact that messaging is the main form of communication among adolescents (Korenis and Billick 2014) and that cell phones offer them greater privacy and control over what they are exchanging.

Overall, text messages were sent more frequently than were images, and prevalence was lowest for the posting of images. These findings are also consistent with previous research (Campbell and Park 2014; Fleschler et al. 2013; Houck et al. 2014; Mitchell et al. 2012; Morelli et al. 2016a, 2016b). The exchange of text messages is generally easier and less compromising than is the case for images. Posting images implies a greater level of involvement and is the most compromising and potentially risky of these behaviors.

Our results also showed that the prevalence of sexting was related to gender and the stage of adolescence, but not to socioeconomic status. The latter finding suggests that sexting and its consequences is a phenomenon common to all levels of society.

Regarding gender, we found a higher prevalence of sexting among boys, thus supporting the findings of several previous studies (Baumgartner et al. 2014; Morelli et al. 2016a; Strassberg, Cann, and Velarde 2017; Van Ouytsel et al. 2014; West et al. 2014). These gender differences may be related to cultural stereotypes of masculinity and femininity (West et al. 2014) and to models of unequal romantic relationships that derive from them. Some authors emphasize that boys express their masculinity by demonstrating that they are sexually active or that they have access to sex (Ševčíková 2016). In addition, empirical evidence suggests that boys who sext have a higher peer status and gain reputation by possessing provocative images (Ringrose and Harvey 2015), whereas girls are more likely to be criticized for such behavior (Lippman and Campbell 2014; Livingstone and Görzig 2014; Ringrose and Harvey 2015; Walrave, Heirman, and Hallam 2014).

With respect to age, and in line with previous research (Baumgartner et al. 2014; Gámez-Guadix, De Santisteban, and Resett 2017; Lenhart 2009; Lippman and Campbell 2014; Mitchell et al. 2012; Morelli et al. 2016b; Rice et al. 2012, 2014; Ybarra and Mitchell 2014), we found that sexting was more common in late and middle adolescence. Research shows that older adolescents are more involved in sentimental relationships, have greater independence, and are more likely to be sexually active (Barrense-Dias et al. 2017; Döring 2014; Kopecký 2015; Lenhart et al. 2010; Lippman and Campbell 2014; Livingstone and Görzig 2014; Ringrose and Harvey 2015), and their increased use of sexting might therefore be interpreted as part of their greater sexual interest.

Some sexting behaviors were more common among adolescents in a romantic relationship, which is consistent with the idea that sexting is used as part of a romantic interaction or flirting and may be considered by adolescents as a sign of love or a demonstration of trust (Albury and Crawford 2012; Kopecký 2012, 2015; Korenis and Billick 2014; Lenhart 2009; Lippman and Campbell 2014). Overall, the prevalence of sexting was higher when the person being sexted was a partner or someone regarded as attractive than when it was a friend.

Finally, wanting to have sex was the main motivation for sexting, followed by joking with people, wanting to date someone, and wanting to talk to someone. More specifically, wanting to have sex was the main reason endorsed by boys, middle and late adolescents, and those with a partner. By contrast, joking with people was the motivation most commonly endorsed by girls and early adolescents. The fact that the motivation differed according to gender, stage of adolescence, and being in a romantic relationship is a further indication that sexting is used as a way of expressing sexuality.

These results related to prevalence were obtained by considering the items about sexting behavior separately. In order to examine the best predictors of sexting by means of hierarchical regression analysis we considered the total score on active sexting as the dependent variable and the nature of the relationship to the person sexted and the motivation for sexting as potential predictors, controlling for sociodemographic variables and passive sexting. The regression analysis was performed in four stages. In the final stage of the analysis, gender was the only sociodemographic variable that remained statistically significant. At this stage, the model explained 70% of the variance in active sexting. The results showed that males scored higher than females on active sexting, and that active sexting was positively related to passive sexting. In addition, those adolescents who more strongly endorsed the statements about sexting people

regarded as attractive and sexting because they want to have sex or to date someone tended to score higher on active sexting. These results support the aforementioned idea regarding the role of sexting in teenage sexuality.

This study adds to existing knowledge about the prevalence of sexting. One of its main strengths is to provide data for a Latin American country, Ecuador, in which no studies of this kind have previously been conducted. A further strength is that we included a reliable measure of SES, one used by the Government of Ecuador, in order to examine the possible association between this variable and sexting, a relationship that, to our knowledge, has not previously been studied. The study does, however, have certain limitations. For example, the participants were all from the city of Quito and it would be interesting in future studies to explore other geographical areas of the country. In addition, participants were recruited by means of convenience sampling, thereby restricting the generalizability of the findings. Likewise, the study is mainly descriptive and correlational and analyzes the association with sociodemographic variables, the type of relationship to the person sexted, and the motivation for sexting. Future research should therefore consider psychological and other variables related to the use of technology, the use of online networks, and involvement in online communities in order to examine their potential contribution to sexting in this population.

Overall, the results show that sexting is not related to socioeconomic status, that passive sexting is more common than active sexting, and that sexting is more prevalent among boys, late and middle adolescents, and those in a romantic relationship. In these groups, wanting to have sex was the main motivation for sexting, whereas joking with people was the main reason endorsed by girls and early adolescents. In addition, higher scores on active sexting were associated with receiving more texts or images involving sexual content, with more frequent sexting of someone regarded as attractive, and with wanting to have sex or dating as the motivation for sexting. These findings corroborate those reported in the USA and Europe, which consistently suggest that sexting is a way of expressing sexuality and of sharing intimacy with peers, and that it is related to romantic interaction or flirting (Barrense-Dias et al. 2017; Kopecký 2012, 2015; Lippman and Campbell 2014; Ševčíková 2016; Strassberg, Rullo, and Mackaronis 2014; Temple and Choi 2014; Van Ouytsel et al. 2016).

Given that sexting may impact negatively on adolescent development, the results have certain educational implications. Prevention programs should begin in early adolescence and be strengthened in late adolescence, targeting especially those young people who are in a romantic relationship. Public health and education systems should include sexual health programs in their agendas, not only for adolescents but also for parents, who need to be aware of sexting and the possible risks it entails for their children. In addition, adolescents should be informed not only about the possible consequences of sexting, such as the loss of privacy, harassment, blackmailing, or even the illegal distribution of images, but also about the psychological and emotional repercussions that such behavior may have.

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