The Role of HEXACO Personality Traits in Different Kinds of Sexting:

A Cross-Cultural Study in 10 Countries

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Abstract

Sexting has been defined as sharing sexually suggestive content (i.e., sexts) via Internet or smartphone. To date, only a few studies investigated the role of personality traits in relation to sending or receiving sexts, and most of them used the Five Factor Model of Personality. No studies applied the theoretical model of HEXACO six personality traits (i.e., honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience) when examining different types of sexting (i.e. sending own sexts, risky sexting, sharing sexts from someone else without his/her permission, sexting under pressure). Thus, this is the first study that, using a cross-cultural perspective, investigated HEXACO personality predictors of sexting behaviors considered as a multidimensional construct. A total of 5542 participants from 13 to 30 years old ($M_{age} = 20.36$; $SD_{age} = 3.67$; 60.4% girls and 39.6% boys) from 10 different countries participated in the study. Participants completed the sexting behaviors questionnaire and the HEXACO personality inventory. Four hierarchical regression analyses were conducted to investigate which HEXACO personality traits predicted different sexting behaviors, controlling for country, biological sex, age, sexual identity status, and dating relationship status. Results showed that honesty-humility and conscientiousness were negatively predictive of all investigated sexting behaviors. Emotionality and extraversion were positively related, and agreeableness was negatively related to sending own sexts and risky sexting. Finally, openness to experience was negatively related to sharing sexts from someone else without his/her consent and sexting under pressure. Results have implications for the development and implementation of sexual education and prevention programs aimed towards adolescents and young adults.

Keywords: Sexting; Personality traits; Adolescence; Young adulthood; Cross-cultural study.

1. Introduction

1.1 Sexting Behaviors

Sexting has been conceived as a new form of sexual expression among youth, consisting of sharing sexual content via the Internet or smartphone (Chalfen, 2009). The high prevalence of sexting among young people has been facilitated by easy access to the Internet and the proliferation of communication technologies in daily life (Walrave, Heirman, & Hallam, 2014). However, the prevalence rates of sexting have not been consistent across different studies due to different definitions and assessment methods, as suggested in a recent review (Barrense-Dias, Berchtold, Surìs, & Akre, 2017). Prevalence rates of sexting among adolescents ranged from 12.8% to 16.8% for sending sexts and from 23.1 to 31.7% for receiving sexts (Madigan, Ly, Rash, Van Ouytsel, & Temple, 2018), whilst studies with young adults reported prevalence rates of about 60% for sending sexts in a committed relationship and 44% with a casual sexual partner (Drouin, Coupe, & Temple, 2017), and 78% for receiving sexts (Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2016a). A recent meta-analysis found that the prevalence of sexting among emerging adults ranged between 32% and 44.6% for the sending of sexts and between 31.9% and 51.2% for the receiving of sexts (Mori et al., 2020)

The empirical research on sexting revealed the presence of specific trends in sexting that appear to be related to individual differences. Studies have consistently found an increase in sexting as individuals age, from adolescence to young adulthood (Bianchi, Morelli, Baiocco, & Chirumbolo, 2019; Madigan et al., 2018). Conversely, inconsistent results have been found for gender, with some studies showing higher percentages of sexting among boys (Hudson & Marshall, 2016; Kopecký & Szotkowski, 2018) and others among girls (Van Ouytsel, Van Gool, Walrave, Ponnet, & Peeters, 2017), suggesting that gender differences might depend also on the specific kind of sexting behaviors investigated. A recent meta-analysis found no gender differences in sexting behaviors (Madigan et al., 2018).

Sexting has been found to be more likely reported by young adults who identify as sexual minorities (Bianchi, Morelli, Baiocco, & Chirumbolo, 2017; Gámez-Guadix, de Santisteban, & Resett, 2017; Van Ouytsel, Walrave, & Ponnet, 2019; Ybarra & Mitchell, 2016), perhaps because the online environment can protect them against sexual stigma and prejudice, which they are often exposed to and perhaps because digital media may provide sexual minotiry youth a safer way to connect with peers (Chong, Zhang, Mak, Pang, 2015; Meyer, 2003). Finally, frequency of sexting was also found to be strongly dependent on relationship type (Drouin, Vogel, Surbey, & Stills, 2013), with young adults reporting more positive expectations and attitudes towards sexting with a dating partner rather than a casual sex partner (Drouin et al., 2017).

Sexting studies have also delved into both positive and negative aspects of sexting, dividing the discourse around sexting into two different perspectives (Döring, 2014). The first viewpoint conveys sexting as a new normative sexual behavior that young people engage in to address their developmental tasks and needs (Bianchi, Morelli, Baiocco, Cattelino et al., 2019; Kosenko, Luurs, & Binder, 2017; Levine, 2013). This kind of sexting is also called experimental (Wolak, Finkelhor, & Mitchell, 2012). According to the normalcy perspective, sexting is common among dating partners because it increases fun, intimacy, and passion (Drouin & Tobin, 2014), facilitates communication among minority groups, such as sexual minorities (Chong et al., 2015), and is used to obtain body appearance confirmation and increase self-esteem (Bianchi et al., 2017). Aligning with this perspective, a number of studies have found no differences in psychological well-being between sexters and non-sexters (Hudson & Fetro, 2015; Morelli et al., 2016a).

Conversely, another body of studies stresses the relationships between sexting and several risky outcomes, such as psychological distress (Mori, Temple, Brown, & Madigan, 2019; Temple et al., 2014), substance use (Benotsch, Snipes, Martin, & Bull, 2013; Temple et

al., 2014), and other sexual risky behaviors such as higher rates of sexual activity (Houck et al., 2014) and having unprotected sex (Rice et al., 2014). According to this viewpoint, sexting could be considered a risky behavior in itself: The sender cannot control whether photos and videos they send online are forwarded, posted, or shared, which can expose the person who sent them to negative consequences, such as cyberbullying and cyber-harassment (Bryce & Klang, 2009; Ojeda, Del Rey, & Hunter, 2019; Van Ouytsel, Lu, Ponnet, Walrave, & Temple, 2019), online grooming (Machimbarrena et al., 2018), and sexual solicitation by adults over a one-year period (Gámez-Guadix & Mateos-Pérez, 2019). In line with this framework, another type of sexting must be considered: aggravated sexting (Wolak & Finkelhor, 2011). This type of sexting refers to the presence of harmful intention towards someone else when sharing sexts or forcing someone to share sexts (Wolak & Finkelhor, 2011). Specifically, researchers have found that individuals share sexts from someone else without their consent (i.e., the "not-allowed sexting" or "secondary sexting" or non-consensual sexting; Morelli et al., 2016b) and are sometimes pressured by partner or friends to send sexts (Drouin, Ross, & Tobin, 2015; Van Ouytsel et al., 2017). Aggravated sexting has also been found to be related to dating violence and intimate partner aggression (Drouin et al., 2015; Morelli, Bianchi, Cattelino et al., 2017).

In sum, although sexting may meet the developmental needs of some young people, sexting can be also considered a risky sexual behavior based on its potential to negatively affect psychological well-being (Klettke, Hallford, & Mellor, 2014; Levine, 2013). Therefore, investigating protective and risk factors related to sexting among adolescents and young adults in different cultures, especially personality traits of those who engage in different kind of sexting behaviors, is crucial. This could be useful for the early identification of those at risk for the negative effects of sexting.

1.2 Personality Traits and Sexting

To date, only a few studies have investigated which personality traits are related to sexting behaviors. Sexting has been found to be related to impulsivity-related traits, such as sensation-seeking and negative urgency (Dir, Cyders & Coskunpinar, 2013; Temple et al., 2014; Van Ouytsel, Van Gool, Ponnet, & Walrave, 2014). Meanwhile, a few studies investigated the role of personality traits in sexting behaviors employing the Five Factor Model as the personality theoretical framework (Alonso e Romero, 2019; Delevi & Weisskirch, 2013; Gámez-Guadix et al., 2017; Gámez-Guadix & De Santisteban, 2018; Olatunde & Balogun, 2017). Delevi and Weisskirch (2013) found that extraversion was positively related to sending sexual text messages, whilst neuroticism was positively related and agreeableness negatively related to sending sexually suggestive photos among American undergraduates. Olatunde and Balogun (2017) found that higher extraversion scores predicted both receiving and sending sexts in Nigerian students aged 14-24. Gámez-Guadix et al. (2017) found that Spanish adolescent sexters showed higher levels of extraversion and neuroticism, and lower levels of conscientiousness and agreeableness than non-sexters. Additionally, Gámez-Guadix and De Santisteban (2018) found that lower levels of conscientiousness and higher levels of extraversion were related to increased involvement in sexting behaviors within one year among Spanish adolescents. Finally, Alonso and Romero (2019) found that high extraversion and low agreeableness and conscientiousness predicted an increase in sexting behaviors within one year in Spanish adolescents. Each of these studies assessed general sexting behaviors in terms of sending and receiving nude or sexually suggestive text messages, photos, and/or video without distinguishing among experimental, aggravated, and at-risk sexting behaviors.

Furthermore, there are no known published studies that have investigated personality traits related to sexting behaviors applying the HEXACO model of personality (Lee & Ashton, 2004). The HEXACO model of personality has been demonstrated to be more helpful

than the Big Five Factor Model in understanding many phenomena connected to clinical, deviant and risky behaviors (Ashton & Lee, 2007; Ashton, Lee, & de Vries, 2014). The HEXACO model originated from the same lexical and cross-cultural studies which served as bases of the Big Five Factor Model. However, the HEXACO model identifies six core personality traits instead of five (Ashton et al., 2006): honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. Thus, the HEXACO model integrated the traditional Big Five Factor Model but added a sixth personality factor: honesty-humility. People with high levels of honesty-humility traits are inclined to be sincere, honest, and modest and are more likely to cooperate with others; on the contrary, people with low level of honesty-humility are inclined to be presumptuous, dominant, and manipulative, and to break the rules to gain their own advantages (Lee & Ashton, 2013). This factor has been found to be a strong predictor of different aggressive, antisocial, and risky behaviors, and low levels of honesty-humility are usually strongly associated with psychopathological personality traits of the Dark Triad Model (Ashton et al., 2014).

Another difference between the personality models is that agreeableness and emotionality differ slightly because in the HEXACO, they are rotational variants of their Five Factor counterparts (Ashton et al., 2004). Individuals high in emotionality show high emotional response to stressful events, are empathic, and need to be emotionally supported. In contrast, individuals low in emotionality are emotionally detached from others and from stressful events and need low emotional support (Lee & Ashton, 2004). Meanwhile, individuals with high levels of agreeableness show high level of tolerance and forgiveness, they are uncritical towards others, and prone to cooperation. Conversely, individuals with low levels of agreeableness are resentful and critical of others and rigid in their positions (Lee & Ashton, 2004).

The other three factors, conscientiousness, extraversion, and openness to experience, are more similar to the Five Factor model traits (Lee & Ashton, 2004). Conscientiousness characterizes people who are disciplined, organized, perfectionist, and who obsessively plan any activity; on the contrary, people low in conscientiousness are not concerned with their commitments, are satisfied with their work even if mistakes are present, and are more likely to make decisions impulsively (Lee & Ashton, 2004). Extraversion assesses the tendency to feel confident in group interaction and in social ability, to be optimistic and to have good self-esteem. Meanwhile, individuals with low levels of extraversion are not interested and feel uncomfortable in social activity, perceiving themselves to be unpopular (Lee & Ashton, 2004). Finally, openness to experience is related to fantasy, creativity, preference for novelty and new ideas, and risk-taking. Conversely, individuals with low openness to experience are resistant to change, prefer to adhere to convention and predictable situations, are more traditionalist, and less interested in unconventional and creative activities (Lee & Ashton, 2004).

Previous studies showed how HEXACO personality traits can be related to different online behaviors: Publicly posting selfies was found to be negatively related to honesty-humility and conscientiousness, and positively to emotionality and extraversion (Baiocco et al., 2017). Moreover, conscientiousness was related to less involvement in the use of the Internet and in online behaviors (Swickert, Hittner, Harris, & Herring, 2002; Butt & Phillips, 2008; Hughes, Rowe, Batey, & Lee, 2012), possibly because the Internet is considered a potential distraction from tasks and is perceived as a risky context (Ross et al., 2009).

1.3 Aim and Hypotheses of the present study

The present study aimed to investigate the personality underpinnings of different kinds of sexting behaviors (i.e., experimental sexting, aggravated sexting, and high-risk sexting) among adolescents and young adults across cultures, controlling for biological sex, age,

sexual identity status, and dating relationship status. The HEXACO model was employed

here for the first time to study the relationships between personality and sexting.

This cross-cultural study involved 10 different countries from Europe, USA, Africa, and

Asia (Poland, USA, Italy, Czech Republic, Turkey, Belgium, China, Russia, Ireland, and

Uganda).

Previous studies which investigated the influence of personality traits in sexting

behaviors focused only on commonly-cited behaviors, namely sending and receiving sexually

suggestive text messages or images. There are only two cross-cultural studies on sexting. The

first one investigated the relationship between sending and receiving sexual images and

interpersonal dating violence in five European countries (Bulgaria, Cyprus, England, Italy,

and Norway; Wood, Barter, Stanley, Aghtaie, & Larkins, 2015). However, this study did not

focus on personality predictors of sexting and investigated sexting only within the context of

romantic relationships (i.e., sending sexts to partners), not considering that the majority of

people send sext outside of a romantic relationship.

The other cross-cultural study on sexting was conducted in 20 European countries (i.e.,

Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany,

Greece, Hungary, Ireland, Netherlands, Norway, Poland, Portugal, Spain, Slovenia, Sweden,

United Kingdom) investigated sensation seeking as personality predictor and used a single

dichotomous item to assess sexting (Baumgartner, Sumter, Peter, Valkenburg, & Livingstone,

2014). However, the study by Baumgartner et al. (2014) used a somehow problematic

definition and measurement of sexting. Sexting was actually measured by asking participants

whether they have sent or posted a sexual message (e.g., words, pictures, or videos) of any

kind on the Internet in the past 12 months. Thus, this single item measure did not distinguish

between sending own's sexts and sending/forwarding general commercial pornography. This

limitation may be related to the fact that Baumgartner et al. (2014) used a survey data not

specifically designed to investigate sexting behaviors. To overcome this shortcoming, the present study aimed to specifically examine different kinds of sexting behaviors in different countries using the same multi-item measure, namely the Sexting Behaviors Questionnaire, which has proved to be reliable and valid (Dodaj, Sesar, & Cvitković , 2019; Dodaj, Sesar, & Jerinić, 2020; Morelli et al., 2016a; Morelli, Bianchi, Baiocco et al., 2017). In this regards, a recent criticism by Barrense-Dias et al. (2017) highlighted a problem in comparing the phenomenon of sexting in different countries and contexts. In fact, the different studies in the literature cannot be compared to each other because every scholar has been using a different definition and measure of sexting. As such, the present study addressed this criticism being in fact the first study that can actually do a real cross-country comparison of sexting behaviors.

To sum up, the present study has a number of original strengths: (1) It would be the first study investigating HEXACO personality predictors of sexting behaviors, employing at the same time a cross-cultural perspective. (2) it would be the first study that investigates data from four different continents, also including countries such as Uganda, China, and Russia that are usually absent in sexting research; (3) unlike previous cross-cultural studies, in the present research sexting was considered as a multidimensional construct, operationalized via a uniformed and validated scale of actual sexting behaviors; (4) it would go beyond what was examined in prior sexting cross-cultural research, either because previous studies were limited in the scope (e.g., sexting with partner; Wood et al., 2015) either because they adopted a weak single item measure of sexting.

Regarding the influence of HEXACO personality traits on different sexting behaviors, it was hypothesized that high extraversion and emotionality and low agreeableness and conscientiousness would be related to experimental sexting (i.e., sending own photos) and to high risk sexting (i.e., sexting under substance use and with strangers), in line with previous studies (Alonso & Romero, 2019; Delevi & Weisskirch, 2013; Gámez-Guadix et al., 2017;

Gámez-Guadix & De Santisteban, 2018; Olatunde & Balogun, 2017). Moreover, it was

hypothesized that low honesty-humility would be related to aggravated sexting (i.e., non-

consensual sexting and sexting under pressure), in line with studies that have found

associations between honesty-humility, antisocial behaviors, and psychopathological traits of

the Dark Triad (Ashton et al., 2014).

2. Material and Methods

2.1 Participants and Procedure

Data in the present study were collected as part of a cross-cultural research project on

protective and risk factors for sexting. Data collection involved 10 countries (i.e., Poland,

USA, Italy, Czech Republic, Turkey, Belgium, China, Russia, Ireland, and Uganda) resulting

in a total of 5542 participants aged 13 to 30 years old ($M_{age} = 20.36$; $SD_{age} = 3.67$; 59.8%

girls). Overall, 73.8% of participants ($n = 4088$) reported being exclusively heterosexual;

whereas the remaining 26.2% ($n = 1454$) reported to be sexual minorities (i.e., anything but

exclusively heterosexual). Regarding relationship status, 83.7% ($n = 4638$) reported currently

having a dating partner or having had one in the past; the remaining 16.3% ($n = 904$) reported

that they had never had a dating partner. Descriptive statistics of participants for each country

are reported in Table A.1. The participants of the samples of each country were independent

to each other and no one was measured repeatedly.

Table A.1

Sample Characteristics by Country

Countries	Sample size	Age		Biological Sex		Sexual Identity Status		Dating relationship	
		Range	M(SD)	% girls	% boys	% Hetero	% Sexual Minorities	% No	% Yes
Belgium	427	14-30	19.36 (3.40)	69.3	30.7	77.8	22.2	12.9	87.1
China	356	17-30	21.28 (2.66)	60.7	39.3	77.5	22.5	29.2	70.8
Czech Republic	716	13-30	19.54 (3.15)	64.4	35.6	68.7	31.3	10.1	89.9
Ireland	261	13-17	15.05 (0.69)	0	100	84.7	15.3	41.8	58.2
Italy	789	13-30	20.86 (4.25)	59.1	40.9	80.6	19.4	10.0	90.0
Poland	1075	13-30	20.8 (4.18)	50.5	49.5	61.8	38.2	25.6	74.4
Russia	278	15-30	19.79 (3.31)	74.8	25.2	62.2	37.8	18.3	81.7
Turkey	591	18-30	22.65 (2.93)	70.4	29.6	81.9	18.1	10.8	89.2
Uganda	118	15-20	17.46 (1.24)	59.3	40.7	33.9	66.1	28.0	72.0
USA	931	18-30	20.74 (2.37)	68.4	31.6	82.7	17.3	6.7	93.3

In order to determine the necessary sample size for each country, two a priori power analyses were conducted. At the bivariate level, alpha was fixed to the conventional level of .05, power was set to .80 (Cohen, 1988), and a small effect size was hypothesized ($r = .20$, Cohen, 1988). Given these parameters, the power analysis resulted in a required minimum sample size of $N = 194$. Therefore, each country was asked to gather at least 200 participants. At the multivariate level, we conducted another power analysis in a context of a multiple regression (Cohen, 1988). The minimum required sample size to detect a low anticipated effect size $f^2 = .05$ was $N = 421$, considering that the parameters of power analysis were fixed as follows: (1) ten predictors (i.e., the six Hexaco personality traits plus the socio-demographic variables); (2) the power level set at .90; (3) the significant level of Alpha set at point .05. Therefore, the total sample size of 4088 is more than satisfactory in terms of statistical power.

The Italian research group designed and coordinated the cross-cultural research project, contacting research collaborators of all countries enrolled in this study. In order to join this cross-cultural project, the research teams of each country were requested to approve and sign a scientific agreement in which all details about the research project and data collection procedure were described. An English version of the survey was developed and shared with all co-authors. The research team of each country (except for English-speaking countries) worked to adapt the language of the survey, following a translation and back translation procedure. Regarding the HEXACO-PI-R Personality Inventory (Lee & Ashton, 2004), validation and adaptation in each language was retrieved from the official HEXACO webpage (http://www.hexaco.org/hexaco-inventory). Each country's research team was responsible for its own data collection, which was conducted via online surveys (e.g., Google survey, Unipark) in order to guarantee more privacy during assessment, as suggested by Clark Newmann et al. (2002). All participants gave their informed consent in accordance with the

Declaration of Helsinki. For underage participants, data collection was conducted in the school informatic labs, and informed consents were also obtained by school authorities and parents. The Ethics Committee of the University (*blinded for peer review*) approved this study.

2.2 Measures

      2.2.1 Socio-demographic variables. Participants reported their age, biological sex (0 = girls; 1 = boys), and dating relationship status (having never had a partner = 0; currently have or have had a partner = 1).

      2.2.2 Sexual identity status. Participants reported their sexual identity status on a 7-point Likert scale (1 = *exclusively heterosexual*; 2 = *predominantly heterosexual*; 3 = *bisexual*; 4 = *predominantly lesbian/gay*; 5 = *exclusively lesbian/gay*; 6 = *not sure*; 7 = *other*). Following the procedure used in previous studies (e.g., Pistella, Ioverno, & Russell, 2019), respondents were categorized as exclusively heterosexual (who answered 1) and sexual minorities (who answered from 2 to 7).

      2.2.3 HEXACO personality traits. The 60-item HEXACO Personality Inventory Revised (HEXACO-PI-R; Ashton & Lee, 2009) was administered to assess the six personality traits (i.e., honesty-humility; emotionality; extraversion; agreeableness; conscientiousness; openness to experience). Each personality dimension consisted of 10 items rated on a 5-point Likert scale from 1 = *completely disagree* to 5 = *completely agree* and showed satisfactory reliability, with Cronbach's alpha values ranging from .68 to .76 (honesty-humility .72, emotionality .73, extraversion .76, agreeableness .68, conscientiousness .73, and openness to experience .71).

      2.2.4 Sexting. Sexting was defined as the exchange of sexually suggestive and provocative text messages/photos/videos via the Internet or smartphone. The frequency of four sexting behaviors during the last year was assessed by 18 items from the Sexting

Behaviors Questionnaire (SBQ; Morelli et al., 2016a). Participants rated each item on a 5-point Likert scale from 1 = *Never* to 5 = *Always* or *almost daily*. Four items assessed how often participants had privately sent and publicly posted their own sexts (i.e., sharing own sexts; sample item is "How often have you privately sent provocative or sexually suggestive photos about yourself?"; Cronbach's alpha of .70). Four items were administered to measure risky sexting, which comprised engaging in sexting during substance and alcohol use and sharing sexts with strangers met online (a sample item is "Sometimes I sext when I am smoking marijuana"; Cronbach's alpha of .72). Eight items assessed the non-consensual sexting, consisting of privately sending and publicly posting sexts of someone else (i.e., a partner or an acquaintance) without his/her consent (a sample item is "How often have you publicly posted sexually suggestive or provocative photos about your partner without his/her consent?"; Cronbach's alpha was .92). Finally, two items assessed sexting under pressure of a partner or friends (a sample item is "Sometimes I sext because my friends forced me"; Cronbach's alpha was .70).

2.3 Data Analysis

Descriptive statistics and frequencies of all investigated sexting behaviors were computed, and Pearson's correlations among all study variables were calculated. Then, four hierarchical regression analyses were conducted to investigate which HEXACO personality traits (i.e., honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience) predicted different sexting behaviors (i.e., sending own sexts, risky sexting, non-consensual sexting, sexting under pressure), controlling for country, biological sex, age, sexual identity status, and dating relationship status. The regression analyses on non-consensual sexting and sexting under pressure were run only on the subsample of participants who reported to have or have had a dating partner ($n = 4624$; $M_{age} = 20.78$; $SD_{age} = 3.63$; age range = 13-30; 61.5% girls; 74.6% exclusively heterosexual), since

these two dimensions comprised items about sexting behaviors with a dating partner. Thus, dating relationship status was not added as a covariate in these two regressions since all participants currently have or have had a dating relationship.

As participants were nested in different countries, the intraclass correlation coefficient (ICC) related to the study variables was computed to assess the need for multilevel modelling. Usually, ICCs lower than .10 suggest that contextual effects are trivial so that the nested structure of the data can be disregarded (Hox, 2010). The ICC computed for all the study variables was .05, confirming that contextual effects can be considered marginal (Hox, 2010). Consequently, we did not take into account the nested structure of the data. On the contrary, to control for country effects, we followed the suggestions of Cohen, Cohen, West and Aiken (2013) and performed a set of hierarchical multiple regression equations including each country as a dummy coded variable, considering the USA as the reference point. As such, nine dummy coded variables were added to the regression equation. The USA was considered as a reference point because most of the studies on sexting have been conducted in the United States (Gassò, Klettke, Agustina, & Montiel, 2019; Klettke et al., 2014; Madigan et al., 2018).

Therefore, in the first step of each regression analysis, countries (i.e., dummy coded), biological sex (0 = girls; 1 =boys), age, sexual identity status (exclusively heterosexuals = 0; sexual minorities = 1), and dating relationship status (having never had a partner = 0; currently have or have had a partner = 1) were entered in order to control their effects. In the second step, the six HEXACO personality traits were added to the regression equation. A two-tails significant testing was employed. All analyses were performed using the software SPSS 25. All data are available for inspection under request: The first author is prepared to provide clarification if needed.

3. Results

3.1 Descriptive Statistics

Regarding frequencies of each sexting behavior, sharing own sexts was reported at least once by 41.4% of participants ($n = 2293$), and engaging at least once in risky sexting was reported by 42.7% ($n = 2366$). In the subsample of participants who reported to have or to have had a dating relationship, non-consensual sexting was reported at least once by 9.6% of participants ($n = 444$), and sexting under pressure was reported at least once by 14.7% ($n = 679$). Descriptive statistics of sexting behaviors for each country are reported in Table A.2.

Table A.2

Descriptive Statistics of Sexting by Country

	Sexting behaviors			
Countries	Own sexts M(SD)	Risky sexting M(SD)	Non-consensual sexting[a] M(SD)	Sexting under pressure[a] M(SD)
Belgium	1.21 (0.31)	1.23 (0.35)	1.02 (0.09)	1.06 (0.22)
China	1.12 (0.45)	1.09 (0.38)	1.14 (0.49)	1.15 (0.54)
Czech Republic	1.26 (0.49)	1.40 (0.71)	1.11 (0.43)	1.31 (0.73)
Ireland	1.23 (0.64)	1.41 (0.86)	1.19 (0.64)	1.22 (0.77)
Italy	1.24 (0.37)	1.23 (0.41)	1.07 (0.22)	1.08 (0.28)
Poland	1.25 (0.48)	1.31 (0.54)	1.07 (0.35)	1.07 (0.38)
Russia	1.23 (0.35)	1.18 (0.30)	1.06 (0.17)	1.12 (0.33)
Turkey	1.15 (0.29)	1.30 (0.50)	1.02 (0.11)	1.37 (0.66)
Uganda	1.16 (0.57)	1.17 (0.57)	1.29 (0.71)	1.20 (0.59)
USA	1.29 (0.40)	1.30 (0.46)	1.08 (0.29)	1.07 (0.27)

Note. [a] Statistics for non-consensual sexting and sexting under pressure were computed on a subsample of 4624 participants who reported to have or have had a dating partner.

Moreover, in Table A.3 are reported prevalence of sexting by countries, that is percentages of people from each country who reported to have been involved in each sexting behaviors at least once.

Table A.3

Prevalence of Sexting by Countries

Countries	Sexting behaviors			
	Own sexts %(n)	Risky sexting %(n)	Non-consensual sexting[a] %(n)	Sexting under pressure[a] %(n)
Belgium	47.8(204)	44.7(191)	10.3(44)	9.2(34)
China	14.3(51)	12.4(44)	13.8(49)	11.5(29)
Czech Republic	45.9(329)	53.1(382)	21.2(152)	27.3(174)
Ireland	28.4(74)	35.2(92)	17.2(45)	13.9(21)
Italy	47.4(374)	41.4(327)	18.3(145)	10(71)
Poland	40.6(436)	48.3(519)	12.3(132)	5.5(44)
Russia	45.7(127)	40.3(112)	19.8(55)	15(34)
Turkey	30.6(181)	42.5(251)	9(53)	35.9(189)
Uganda	16.9(20)	18.6(22)	23.7(28)	15.3(13)
USA	54.4(506)	45.8(426)	16.7(145)	8.1(70)

Note. [a] Statistics for non-consensual sexting and sexting under pressure were computed on a subsample of 4624 participants who reported to have or have had a dating partner. In table are reported percentages of people who reported to have been involved in each sexting behaviors at least once.

3.2 Correlations among all Variables

Honesty-humility and conscientiousness were negatively and significantly related to all sexting behaviors. Emotionality was significantly and negatively related to risky and

aggravated sexting. Conversely, extraversion showed significant and positive correlations with sharing own sexts and risky sexting, whilst agreeableness showed significant and negative correlations with sharing own sext and risky sexting. Finally, openness to experience was negatively and significantly related to non-consensual sexting. Correlations, means, and standard deviations are reported in Table A.4.

Table A.4 Correlations among Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	M	SD
1.Biological Sex	1														--	--
2.Age	-.01	1													20.36	3.67
3.Sexual Identity Status	-.14***	-.01	1												--	--
4.Dating Relationship	-.07***	.25***	-.04**	1											--	--
5. Honesty/Humility	-.19***	.14***	-.10***	.02	1										3.25	0.69
6. Emotionality	-.42***	.01	.04**	.05***	.15***	1									3.23	0.67
7. Extraversion	.02	.02	-.13***	.16***	-.04**	-.11***	1								3.16	0.69
8. Agreeableness	.06***	.05**	-.07***	-.04**	.26***	-.03*	.06***	1							3.03	0.61
9. Conscientiousness	-.08***	.16***	-.09***	.07***	.25***	.06***	.15***	.10***	1						3.43	0.63
10. Openness to experience	-.07***	.24***	.18***	.02	.07***	.01	.07***	.06***	.12***	1					3.33	0.68
11. Own sext	.01	.05***	.13***	.16***	-.13***	.01	.05***	-.08***	-.05***	.01	1				1.23	0.43
12.Risky sexting	.08***	.04**	.12***	.14***	-.22***	-.07***	.04**	-.10***	-.12***	.01	.55***	1			1.28	0.53
13. Non-consensual sexting[a]	.11***	-.05***	.07***	--	-.10***	-.07***	-.01	-.03	-.12***	-.06***	.63***	.52***	1		1.08	0.33
14. Sexting under pressure[a]	.09***	-.01	.05**	--	-.09***	-.06***	-.01	-.01	-.11***	.01	.40***	.53***	.52***	1	1.15	0.49

Note 1: *** $p < .001$; ** $p < .01$; * $p < .05$. N = 5542 Biological sex was coded as 0 = girls and 1 = boys. Sexual identity status was coded as 0 = exclusively heterosexual and 1 = sexual minorities; Dating relationship was coded as 0 = never had a partner and 1 = have or have had a partner. Point biserial correlations were run between dichotomous variables such as biological sex, sexual identity, and dating relationship and continuous variables. Correlations among dichotomous variables were the phi correlation coefficients. All other correlations were Pearson's r correlations.

[a] Correlations for non-consensual sexting and sexting under pressure were computed on a subsample of 4624 participants who reported to have or have had a dating partner.

3.3 Hierarchical Regression Analyses

Four hierarchical regression analyses were conducted to investigate which HEXACO personality traits (i.e. honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, openness to experience) predict, respectively, sharing own sexts, risky sexting, non-consensual sexting, and sexting under pressure, controlling for country, biological sex, age, sexual identity status, and dating relationship status.

With regard to sharing own sexts, in the first step of the regression analysis, country, biological sex, age, sexual identity status, and dating relationship status were entered as covariates, accounting for 5.9% of the variance, $R = .24$, $p < .001$. The second step, in which the six HEXACO personality traits were added to the regression equation, added a significant 1.8% to the explained variance. Thus, the final model accounted for the 7.7% of the variance, $R = .28$, $p < .001$. Being a respondent from Belgium, China, Czech Republic, Italy, Poland, Russia, Turkey, Uganda, age, sexual identity status, dating relationship status, honesty-humility, extraversion, agreeableness, and conscientiousness emerged as significant predictors of sharing own sexts.

Regarding the second regression analysis on risky sexting, in the first step the covariates (i.e., country, biological sex, age, sexual identity status, and dating relationship status) accounted for 7% of the variance, $R^2 = .07$, $R = .26$, $p < .001$. In the second step, the six HEXACO personality traits added a significant 4.9% to the explained variance. Thus, the final model accounted for the 11.8% of the variance, $R^2 = .118$; $R = .34$, $p < .001$. Being a respondent from Belgium, China, Ireland, Italy, Poland, Russia, Uganda, biological sex, age, sexual identity status, dating relationship status, honesty-humility, emotionality, extraversion, agreeableness, and conscientiousness emerged as significant predictors of risky sexting.

The third regression analysis was run on non-consensual sexting. In the first step the covariates (i.e., country, biological sex, age, and sexual identity status) accounted for 3.6% of

the variance, $R^2 = .036$, $R = .19$, $p < .001$. In the second step, the six HEXACO personality

traits added a significant 1.4% to the explained variance. Thus, the final model accounted for

the 5% of the variance, $R = .22$, $p < .001$. Being a respondent from Belgium, Poland, Turkey,

Uganda, biological sex, sexual identity status, honesty-humility, conscientiousness, and

openness to experience emerged as significant predictors of non-consensual sexting.

Finally, in the fourth regression analysis on sexting under pressure, the first step

accounted for 7.2% of the variance, $R^2 = .072$, $R = .27$, $p < .001$. In the second step, the six

HEXACO personality traits added a significant 1.3% to the explained variance. Thus, the

final model accounted for the 8.5% of the variance, $R^2 = .085$ $R = .29$, $p < .001$. Being a

respondent from Czech Republic, Poland, Turkey, biological sex, sexual identity status,

honesty-humility, conscientiousness, and openness to experience emerged as significant

predictors of sexting under pressure. See Table A.5 for detailed statistics.

Table A.5

Sexting Behaviors Regressed on Personality Traits (Step 3)

	Sexting behaviors											
	Own sexts			Risky sexting			Non-consensual sexting			Sexting under pressure		
Predictors	*b*	*SE*	*VIF*	*b*	*SE*	*VIF*	*b*	*SE*	*VIF*	*b*	*SE*	*VIF*
Belgium	-.36***	.10	1.38	-.10**	.03	1.38	-.60***	.16	1.34	-.03	.03	1.34
China	-.61***	.11	1.37	-.22***	.03	1.37	.34	.19	1.27	.04	.03	1.27
Czech Republic	-.24**	.09	1.64	.04	.03	1.64	.01	.14	1.60	.21***	.03	1.60
Ireland	-.05	.13	1.50	.08*	.04	1.50	.26	.25	1.32	.03	.04	1.32
Italy	-.24**	.08	1.65	-.09***	.02	1.65	-.17	.14	1.61	.01	.02	1.61
Poland	-.28**	.08	2.03	-.08**	.02	2.03	-.44**	.14	1.81	-.07**	.02	1.81
Russia	-.40**	.12	1.34	-.19***	.04	1.34	-.30	.20	1.31	.02	.04	1.31
Turkey	-.60***	.09	1.65	-.02	.03	1.65	-.35*	.15	1.62	.31***	.03	1.62
Uganda	-.67***	.17	1.17	-.22***	.05	1.17	1.22***	.30	1.13	.05	.05	1.13
Biological sex	.06	.05	1.40	.05**	.02	1.40	.50***	.09	1.39	.09***	.02	1.39
Age	.03***	.01	1.37	.01***	.00	1.37	.01	.01	1.29	.01	.00	1.29
Sexual identity	.53***	.05	1.16	.16***	.02	1.16	.46***	.09	1.15	.07***	.02	1.15
Dating relationship	.68***	.07	1.17	.18***	.02	1.17	--	--	--	--	--	--
HH	-.25***	.04	1.28	-.13***	.01	1.28	-.19**	.06	1.29	-.05***	.01	1,29

E		.05	.04	1.27		-.03*	.01	1.27	-.08	.06	1.29	-.02	.01	1.29
X		.11**	.03	1.14		.03**	.01	1.14	.02	.06	1.11	.00	.01	1.11
A		-.11**	.04	1.13		-.04***	.01	1.13	-.07	.07	1.13	.00	.01	1.13
C		-.13**	.04	1.17		-.07***	.01	1.17	-.35***	.07	1.70	-.05***	.01	1.70
O		.01	.04	1.27		.01	.01	1.27	-.15*	.06	1.29	-.02*	.01	1.29
R^2	.08***				.12***				.05***			.08***	
N	5542				5542				4624			4624	

Note. *** $p < .001$; ** $p < .01$; * $p < .05$.. Unstandardized regression coefficients are reported. Biological sex was coded as 0 = girls and 1 = boys. Sexual identity status was coded as 0 = exclusively heterosexual and 1 = sexual minorities; Dating relationship was coded as 0 = never had a partner and 1 = have or have had a partner. HH = Honesty/Humility; E = Emotionality; X = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness to experience.

3.4 Interaction Effects Between Personality Factors

In a pure explorative vein, we investigated for possible interaction effects between personality factors[1]. The procedure recommended by Aiken and West (1991) was followed. For the sake of brevity, here only significant effects are reported. Regarding sharing own sexts, no significant interaction effects were found. Regarding risky sexting, a significant interaction effects between honesty/humility and conscientiousness emerged, $b = .02$, $p = .01$. A simple slope analysis indicated that, when conscientiousness was low, the negative relationship between honesty/humility and risky sexting was stronger compared than when conscientiousness was high, respectively $b = -.11$ e $b = -.07$.

Regarding non-consensual sexting, a significant interaction effect between emotionality and conscientiousness, $b = .09$, $p = .04$, was found. A simple slope analysis indicated that, when conscientiousness was low, there was a negative relationship between emotionality and non-consensual sexting, $b = -.15$. On the contrary, when conscientiousness was high, the relationship between emotionality and non-consensual sexting was nearly zero, $b = .03$. Moreover, another interaction effect was found between openness to experience and conscientiousness, $b = .09$, $p = .02$. A simple slope analysis indicated that, when conscientiousness was low, there was a negative and stronger relationship between openness to experience and non-consensual sexting, $b = -.20$. Conversely, when conscientiousness was high, the relationship between openness to experience and non-consensual sexting was nearly zero, $b = -.02$.

Finally, regarding sexting under pressure, a significant interaction effects between honesty/humility and conscientiousness emerged, $b = .01$, $p = .03$. A simple slope analysis indicated that, when conscientiousness was low, there was a negative relationship between honesty/humility and sexting under pressure, $b = -.05$. Instead, when conscientiousness was

high, the relationship between honesty/humility and sexting under pressure was nearly zero, *b* = -.01.

Therefore, if we consider the global picture, it appears that the personality trait of conscientiousness may function as a protective buffering factor in the relationship between specific personality factors (i.e., honesty/humility, emotionality, and openness to experience) and different kinds of sexting behaviors.

4. Discussion and Conclusion

The present study is one of the first cross-cultural research studies that investigated personality traits as predictors of a variety of different sexting behaviors (i.e., experimental, aggravated, and risky sexting) in adolescents and young adults from 10 different countries (i.e., Poland, USA, Italy, Czech Republic, Turkey, Belgium, China, Russia, Ireland, and Uganda). A recent review highlighted the difficulty in comparing results from individual studies from different countries due to the use of different measures of sexting (Barrense-Dias et al., 2017). Therefore, the present study aimed to fill this gap in the literature, allowing for an examination of sexting behaviors worldwide using a validated sexting measure. For instance, findings from the present study showed that young people from the USA are more likely to send and post own sexts than participants from other countries, while previous studies reported higher prevalence of sexting among Italian participants (Klettke et al., 2014; Morelli et al., 2016a).

Meanwhile, Irish youth reported more risky sexting (i.e., sexting under substance use and sexting with strangers met online) than American youth, but this result could be due to the fact that the Irish sample was predominantly composed of boys, who are more likely to engage in risky sexual behaviors than girls (Bongers, Koot, Van der Ende, & Verhulst, 2003; Romer & Hennessy, 2007). Young Ugandans reported more non-consensual sexting than American youth, a result that aligns with widespread risky sexual behavior in Africa

(Pinchoff, Boyer, Mutombo, Chowdhuri, & Ngo, 2017), which is leading to the

implementation of sex education programs in schools, especially in Uganda (Kemigisha et al.,

2019). Finally, Turkish and Czech youth, as compared to American youth, reported receiving

more pressure from peers and partners to send sexts. This suggests that coercive and

aggressive dynamics within dating partners may be more common and/or socially acceptable

in these countries (Toplu-Demirtaş, Hatipoğlu-Sümer, & Murray, 2018; Pikálková, 2012;

Terzioglu et al., 2018).

Regarding socio-demographic variables, findings aligned well with previous research.

Specifically, boys were more likely to be involved in risky and aggravated sexting than girls,

in line with previous studies on biological sex differences in sexting (Gregg, Somers, Pernice,

Hillman, & Kernsmith, 2018) and risky sexual behaviors (Romer & Hennessy,2007).

Experimental sexting and risky sexting increased with age. These findings align with

previous studies that showed a greater prevalence of sexting among young adults than

adolescents (Bianchi et al., 2019; Madigan et al., 2018) and support the notion that sexting

may have a developmental trend similar to that of the development of sexual activity from

adolescence to young adulthood (Rice et al., 2018). Regarding sexual identity status, sexual

minority participants were more likely than those who identified as exclusively heterosexual

to report participating in each of the measured sexting behaviors. This result confirms that

sexual minority youth are more likely to engage in sexting than exclusively heterosexual

youth (Currin & Hubach, 2019), perhaps because online communication is a protective factor

for sexual stigma and prejudice (Chong et al., 2015).

Finally, participants currently involved or who have been in a dating relationship

reported more experimental and risky sexting than people who have never been in a dating

relationship. This result supports findings from previous studies showing that people in a

dating relationship, as opposed to those in casual sexual relationships, show more positive

expectations and attitudes toward sexting, likely because sexting is perceived as a way to strengthen intimacy, passion, and satisfaction within partners (Dir et al., 2013; Drouin et al., 2013).

With regard to the association between personality traits and sexting, this is the first cross-cultural study that identified patterns of personality traits for different types of sexting behaviors, after accounting for country and socio-demographic variables. Both honesty-humility and conscientiousness were found to be negative predictors of all types of sexting behaviors (i.e., experimental, risky, and aggravated sexting). These findings align somewhat with previous studies that found a negative relationship between honesty-humility, posting selfies (Baiocco et al., 2017), and high level of narcissism (Lee & Ashton, 2005). An explanation for this pattern of results could be the tendency for those with low honesty-humility to get confirmation and attention from others (Lee & Ashton, 2005). Thus, they could be more likely to become involved in experimental and risky sexting behaviors to receive confirmation and approval that can nurture their beliefs about being socially dominant (Lee & Ashton, 2005). Moreover, people low in honesty-humility are also more prone to deception and exploiting others for their own advantage (Lee & Ashton, 2005). This could be the reason why young people low in honesty-humility tend to be more involved in aggravated sexting, specifically sharing sexts of others without their permission.

The negative relationships between conscientiousness and all types of sexting behaviors aligns somewhat with results from previous studies showing a relationship between low conscientiousness, posting selfies (Baiocco et al., 2017), and greater use of social networks (Butt & Philipps, 2008). Moreover, this result is in line with previous studies on Big Five personality traits and sexting (Alonso & Romero, 2019; Gámez-Guadix et al., 2017). Individuals high in conscientiousness are less inclined to show private aspects of their lives, they care more about their privacy being respected, they engage less in risk taking behaviors,

and are also more aware of possible negative consequences. Additionally, those who are high

in conscientiousness may also have more guilt and impulse control (Cohen, Wolf, Panter, &

Insko, 2011; Dunlop, Lee, Ashton, Butcher, & Dykstra, 2015), which may make them less

likely to share sexts. Conversely, people with low conscientiousness are less inhibited, more

prone to hedonism, and have a greater interest in sexuality, which may lead them to be

involved in risky and aggravated sexting.

In addition to this, our findings showed how sending own sexts and risky sexting were

negatively predicted by agreeableness and positively predicted by extraversion. These

findings were in line with previous studies on Big Five personality traits and sexting (Alonso

& Romero, 2019; Gámez -Guadix et al., 2017; Olatunde & Balogun, 2017). People with low

agreeableness have difficulty in relating positively to others because they appear critical,

aggressive, and not very attentive to the needs of others advantage (Ashton & Lee, 2008; Lee

& Ashton, 2005). Thus, they may prefer online relationships because they feel more

comfortable and more successful (Gámez -Guadix et al., 2017). Our results also confirmed the

relationship between low agreeableness and high sexual risk-taking (Turchik, Garske, Probst,

& Irvin, 2010): Young people with low agreeableness are indeed more likely to be involved

in risky sexting. Conversely, individuals high in extraversion are more prone to socialization,

looking for social stimuli and fun. Thus, the results of the present study support the

hypothesis that sexting is seen as a form of socialization among young people (Symons,

Ponnet, Walrave, & Heirman, 2018; Vanden Abeele, Campbell, Eggermont, & Roe, 2014).

Previous research found a relationship between extraversion and sensation-seeking that may

explain the relationship between extraversion and risky sexting (Aluja, Garcia, & Garcia,

2003).

Furthermore, emotionality emerged to be a negative predictor of risky sexting. People

with high emotionality have high consideration and awareness of risks; on the contrary,

people low in emotionality are less concerned about risky situations (Lee & Ashton, 2005).

Thus, people low in emotionality show high risk-taking, in general (Lee, Ashton, & De Vries,

2005; Weller & Thulin, 2012) and high levels of sensation seeking (de Vries, de Vries, &

Feij, 2009). This could be an explanation for why they are more inclined to be involved in

risky sexting.

Finally, openness to experience was negatively related to both dimensions of aggravated

sexting (non-consensual sexting and sexting under pressure). People high in openness to

experience show artistic and aesthetic sensitivity, are more connected with their emotions, and

have greater autonomy of thought and decision-making (LePine, Colquitt, & Erez, 2000; Lee

& Ashton, 2005). Thus, people high in openness to experience may be less willing to enact

aggressive behaviors in couple dynamics, as they might in aggressive sexting. Moreover,

previous studies have found low levels of openness to experience in imprisoned offenders

(Rolison, Hanoch, & Gummerum, 2013), and adolescents low in openness to experience were

more inclined to enact racial bullying (Farrell, Della Cioppa, Volk, & Book, 2014). Therefore,

low levels of openness to experience may be indicative of a proclivity towards aggressive

behavior, including aggressive sexting behavior.

The present findings suggest that motivations and functions of sexting as a social

phenomenon may be at least somewhat accounted for by personality self-presentations.

Sending sexts seems to be a common feature among many individuals' social interactions.

Because sexting is becoming more and more popular, engaging in the act itself may provide

important information on individual personality traits and self-representations. In short,

examining the associations between sexting and personality traits may be key to

understanding online sexual self-presentations in-depth.

The present study has some limitations that should be addressed in future research.

Data are cross-sectional, and this does not allow us to draw causal inferences. Future

longitudinal studies are needed to assess the stability of the influence of personality traits on sexting over time. Moreover, self-report instruments were used, and sensitive and private information could be under-reported, especially in countries in which there is a less liberal or more traditional culture of sexuality. Another limitation is related to the use of a single item to capture sexual identity status and future studies should employ more detailed gender and sexual orientation measures. Finally, personality traits only accounted for 1.3%-1.8% of variance, with exception of 4.9% added variance with risky sexting as dependent variable. Therefore, results regarding the association between personality traits and sexting should be interpreted with caution since there are other variables that might also explained sexting behaviors beyond personality traits.

Despite these limitations, this cross-cultural study has implications for education and prevention programs aimed at young people. Education and prevention programs should aim to promote the development of reflective skills, increasing awareness of the risks and consequences of sexting, especially with adolescents low in conscientiousness, who are more likely to engage in sexting and have a slow perception of risk. As previously suggested, educational and preventive programs should encourage a conscious approach to promote and develop an attitude of responsibility in online behaviors (Gámez-Guadix et al., 2017; Garaigordobil & Martínez-Valderrey, 2014). Moreover, interventions should focus on promoting positive relational patterns among youth, emphasizing respect for others and their privacy. Results shed light on the need for school programs promoting more conscious and safe use of the Internet and social networks beginning before adolescence. Specifically, programs should increase knowledge and consideration of risk related to sexting. For example, Patchin and Hinduja (2020) proposed a safer sexting engagement in which young people are empowered with information and tools aimed at protecting them from the possible harming consequences of sharing sexts.

Finally, these results may have clinical implications, as they could be used to inform the development of a brief screening tool to help in the early identification of at-risk adolescent and young adult sexters. Psychotherapists and educators could also identify and delineate specific personality profiles for sexting to help young people avoid risky situations and consequences.

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Footnote

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References

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions.* London: Sage

Alonso, C., & Romero, E. (2019). Sexting behaviours in adolescents: Personality predictors and psychosocial outcomes in a one-year follow-up. *Anales de Psicología*, *35*(2), 214–224. doi:10.6018/analesps.35.2.339831

Aluja, A., García, O., & García, L. F. (2003). Relationships among extraversion, openness to experience, and sensation seeking. *Personality and Individual Differences*, *35*(3), 671–680. doi: 10.1016/S0191-8869(02)00244-1

Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review*, *11*(2), 150–166. doi: 10.1177/1088868306294907

Ashton, M. C., & Lee, K. (2008). The HEXACO model of personality structure and the importance of the H factor. *Social and Personality Psychology Compass*, *2*(5), 1952–1962. doi: 10.1111/j.1751-9004.2008.00134.x

Ashton, M. C., & Lee, K. (2009). The HEXACO–60: A short measure of the major dimensions of personality. *Journal of Personality Assessment*, *91*(4), 340–345. doi:10.1080/00223890902935878

Ashton, M. C., Lee, K., & De Vries, R. E. (2014). The HEXACO Honesty-Humility, Agreeableness, and Emotionality factors: A review of research and theory. *Personality and Social Psychology Review*, *18*(2), 139–152.doi:10.1177/1088868314523838

Ashton, M. C., Lee, K., de Vries, R. E., Perugini, M., Gnisci, A., & Sergi, I. (2006). The HEXACO model of personality structure and indigenous lexical personality dimensions in Italian, Dutch, and English. *Journal of Research in Personality*, *40*(6), 851–875. doi:10.1016/j.jrp.2005.06.003

Ashton, M. C., Lee, K., Perugini, M., Szarota, P., De Vries, R. E., Di Blas, L., ... & De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology*, *86*(2), 356–366. doi:10.1037/0022-3514.86.2.356

Baiocco, R., Chirumbolo, A., Bianchi, D., Ioverno, S., Morelli, M., & Nappa, M. R. (2017). How HEXACO personality traits predict different selfie-posting behaviors among adolescents and young adults. *Frontiers in Psychology*, *7*, 2080. doi: 10.3389/fpsyg.2016.02080

Barrense-Dias, Y., Berchtold, A., Surís, J. C., & Akre, C. (2017). Sexting and the definition issue. *Journal of Adolescent Health*, *61*(5), 544–554. doi: 10.1016/j.jadohealth.2017.05.009

Baumgartner, S. E., Sumter, S. R., Peter, J., Valkenburg, P. M., & Livingstone, S. (2014). Does country context matter? Investigating the predictors of teen sexting across Europe. *Computers in Human Behavior*, *34*, 157–164. doi: 10.1016/j.chb.2014.01.041

Benotsch, E. G., Snipes, D. J., Martin, A. M., & Bull, S. S. (2013). Sexting, substance use, and sexual risk behavior in young adults. *Journal of Adolescent Health*, *52*(3), 307–313. doi:10.1016/j.jadohealth.2012.06.011

Bianchi, D., Morelli, M., Baiocco, R., & Chirumbolo, A. (2017). Sexting as the mirror on the wall: body-esteem attribution, media models, and objectified-body consciousness. *Journal of Adolescence*, *61*, 164–172. doi: 10.1016/j.adolescence.2017.10.006

Bianchi, D., Morelli, M., Baiocco, R., Cattelino, E., Laghi, F., & Chirumbolo, A. (2019). Family functioning patterns predict teenage girls' sexting. *International Journal of Behavioral Development*, *43*(6), 507–514. doi: 10.1177/0165025419873037

Bianchi, D., Morelli, M., Baiocco, R., & Chirumbolo, A. (2019). Individual differences and

developmental trends in sexting motivations. *Current Psychology*, 1–10. doi:

10.1007/s12144-019-00398-

Bongers, I. L., Koot, H. M., Van der Ende, J., & Verhulst, F. C. (2003). The normative

development of child and adolescent problem behavior. *Journal of Abnormal

Psychology, 112(*2), 179–192. doi:10.1037/0021-843X.112.2.179

Bryce, J., & Klang, M. (2009). Young people, disclosure of personal information and online

privacy: Control, choice and consequences. *Information Security Technical Report*,

14(3), 160–166. doi: 10.1016/j.istr.2009.10.007

Butt, S., & Phillips, J. G. (2008). Personality and self reported mobile phone use. *Computers

in Human Behavior*, *24*(2), 346–360. doi: 10.1016/j.chb.2007.01.019

Chalfen, R. (2009). 'It's only a picture': sexting, 'smutty' snapshots and felony charges.

Visual Studies, *24*(3), 258–268. doi: 10.1080/14725860903309203

Chong, E. S., Zhang, Y., Mak, W. W., & Pang, I. H. (2015). Social media as social capital of

LGB individuals in Hong Kong: Its relations with group membership, stigma, and

mental well-being. *American Journal of Community Psychology*, *55*(1-2), 228–238. doi:

10.1007/s10464-014-9699-2

Clark Newman, J., Des Jarlais, D.C., Turner, C.F., Gribble, J., Cooley, P., & Paone, D.

(2002). The differential effects of face-to-face and computer interview modes. *American

Journal of Public Health, 92*, 294–297.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple

regression/correlation analysis for the behavioral sciences*. Mahwah, N.J.: Erlbaum

Associates.

Cohen, T. R., Wolf, S. T., Panter, A. T., & Insko, C. A. (2011). Introducing the GASP scale: a new measure of guilt and shame proneness. *Journal of Personality and Social Psychology*, *100*(5), 947–966. doi: 10.1037/a0022641

Currin, J. M., & Hubach, R. D. (2019). Motivations for nonuniversity-based adults who sext their relationship partners. *Journal of Sex & Marital Therapy*, *45*(4), 317–327. doi: 10.1080/0092623X.2018.1526837

Delevi, R., & Weisskirch, R. S. (2013). Personality factors as predictors of sexting. *Computers in Human Behavior*, *29*(6), 2589-2594. doi: 10.1016/j.chb.2013.06.003

de Vries, R. E., de Vries, A., & Feij, J. A. (2009). Sensation seeking, risk-taking, and the HEXACO model of personality. *Personality and Individual Differences, 47*,536–540. doi: 10.1016/j.paid.2009.05.029

Dir, A. L., Cyders, M. A., & Coskunpinar, A. (2013). From the bar to the bed via mobile phone: A first test of the role of problematic alcohol use, sexting, and impulsivity-related traits in sexual hookups. *Computers in Human Behavior*, *29*(4), 1664–1670. doi: 10.1016/j.chb.2013.01.039

Dodaj, A., Sesar, K., & Cvitković, M. (2019). Sexting and emotional difficulties in high school pupils. *International Journal of Academic Research in Psychology, 6*(1), 1–16. Doi: 10.6007/IJARP/v6-i1/6282

Dodaj, A., Sesar, K., & Jerinić, S. (2020). A prospective study of high-school adolescent sexting behavior and psychological distress. *The Journal of Psychology*, *154*(2), 111–128. doi: 10.1080/00223980.2019.1666788

Döring, N. (2014). Consensual sexting among adolescents: Risk prevention through abstinence education or safer sexting?. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *8*(1). doi: 10.5817/CP2014-1-9

Drouin, M., Coupe, M., & Temple, J. R. (2017). Is sexting good for your relationship? It depends… *Computers in Human Behavior*, *75*, 749–756. doi: 10.1016/j.chb.2017.06.018

Drouin, M., Ross, J., & Tobin, E. (2015). Sexting: A new, digital vehicle for intimate partner aggression? *Computers in Human Behavior*, *50*, 197–204. doi: 10.1016/j.chb.2015.04.001

Drouin, M., & Tobin, E. (2014). Unwanted but consensual sexting among young adults: relations with attachment and sexual motivations. *Computers in Human Behavior*, *31*(2014), 412–418. doi: 10.1016/j.chb.2013.11.001

Drouin, M., Vogel, K. N., Surbey, A., & Stills, J. R. (2013). Let's talk about sexting, baby: Computer-mediated sexual behaviors among young adults. *Computers in Human Behavior, 29*(5), A25–A30. doi: 10.1016/j.chb.2012.12.030

Dunlop, P. D., Lee, K., Ashton, M. C., Butcher, S. B., & Dykstra, A. (2015). Please accept my sincere and humble apologies: The HEXACO model of personality and the proclivity to apologize. *Personality and Individual Differences*, *79*, 140–145. doi: 10.1016/j.paid.2015.02.004

Farrell, A. H., Della Cioppa, V., Volk, A. A., & Book, A. S. (2014). Predicting bullying heterogeneity with the HEXACO model of personality. *International Journal of Advances in Psychology*, *3*(2), 30–39. doi: 10.14355/ijap.2014.0302.02

Gámez-Guadix, M., & De Santisteban, P. (2018). "Sex pics?": Longitudinal predictors of sexting among adolescents. *Journal of Adolescent Health*, *63*(5), 608–614. doi: 10.1016/j.jadohealth.2018.05.032

Gámez-Guadix, M., de Santisteban, P., & Resett, S. (2017). Sexting among Spanish adolescents: Prevalence and personality profiles. *Psicothema*, *29*(1), 29–34. doi: 10.7334/psicothema2016.222

Gámez-Guadix, M., & Mateos-Pérez, E. (2019). Longitudinal and reciprocal relationships between sexting, online sexual solicitations, and cyberbullying among minors. *Computers in Human Behavior, 94*, 70-76. doi:10.1016/j.chb.2019.01.004

Garaigordobil, M., & Martínez-Valderrey, V. (2014). Efecto del Cyberprogram 2.0 sobre la reducción de la victimización y la mejora de la competencia social en la adolescencia. *Revista de Psicodidáctica*, *19*(2), 289–305. doi: 10.1387/RevPsicodidact.10239

Gassó, A. M., Klettke, B., Agustina, J. R., & Montiel, I. (2019). Sexting, mental health, and victimization among adolescents: A literature review. *International Journal of Environmental Research and Public Health*, *16*(13), 2364. doi: 10.3390/ijerph16132364

Gregg, D., Somers, C. L., Pernice, F. M., Hillman, S. B., & Kernsmith, P. (2018). Sexting rates and predictors from an urban midwest high school. *Journal of School Health*, *88*(6), 423–433. doi: 10.1111/josh.12628

Houck, C. D., Barker, D., Rizzo, C., Hancock, E., Norton, A., & Brown, L. K. (2014). Sexting and sexual behavior in at-risk adolescents. *Pediatrics*, *133*(2), e276–e282. doi:10.1542/peds.2013-1157

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications*. Hove, UK: Routledge

Hudson, H. K., & Fetro, J. V. (2015). Sextual activity: Predictors of sexting behaviors and intentions to sext among selected undergraduate students. *Computers in Human Behavior*, *49*, 615–622. doi: 10.1016/j.chb.2015.03.048

Hudson, H. K., & Marshall, S. A. (2016). Sexty Southerners: Sexting Content and Behaviors Among Selected Southern Undergraduates. *Health Educator*, *48*(1), 34–43.

Hughes, D. J., Rowe, M., Batey, M., and Lee, A. (2012). A tale of two sites: twitter vs. facebook and the personality predictors of social media usage. *Computers in Human Behaviors.* 28, 561–569. doi: 10.1016/j.chb.2011.11.001

Kemigisha, E., Bruce, K., Ivanova, O., Leye, E., Coene, G., Ruzaaza, G. N., ... & Michielsen, K. (2019). Evaluation of a school based comprehensive sexuality education program among very young adolescents in rural Uganda. *BMC Public Health*, *19*(1), 1–11. doi: 10.1186/s12889-019-7805-y

Klettke, B., Hallford, D. J., & Mellor, D. J. (2014). Sexting prevalence and correlates: A systematic literature review. *Clinical Psychology Review*, *34*(1), 44–53. doi: 10.1016/j.cpr.2013.10.007

Kopecký, K., & Szotkowski, R. (2018). Sexting in the population of children and its risks: A quantitative study. *International Journal of Cyber Criminology*, *12*(2), 376–391.

Kosenko, K., Luurs, G., & Binder, A. R. (2017). Sexting and sexual behavior, 2011–2015: A critical review and meta-analysis of a growing literature. *Journal of Computer-Mediated Communication*, *22*(3), 141–160. doi: 10.1111/jcc4.12187

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research*, *39*(2), 329–358. doi: 10.1207/s15327906mbr3902_8

Lee, K., & Ashton, M. C. (2005). Psychopathy, Machiavellianism, and narcissism in the Five-Factor Model and the HEXACO model of personality structure. *Personality and Individual Differences*, *38*(7), 1571–1582. doi: 10.1016/j.paid.2004.09.016

Lee, K., & Ashton, M. C. (2013). *The H factor of personality: Why some people are manipulative, self-entitled, materialistic, and exploitive—and why it matters for everyone*. Wilfrid Laurier Univ. Press.

Lee, K., Ashton, M. C., & de Vries, R. E. (2005). Predicting workplace delinquency and integrity with the HEXACO and five-factor models of personality structure. *Human Performance*, *18*(2), 179–197. doi: 10.1207/s15327043hup1802_4

LePine, J. A., Colquitt, J. A., & Erez, A. (2000). Adaptability to changing task contexts:

Effects of general cognitive ability, conscientiousness, and openness to experience.

Personnel Psychology, *53*(3), 563-593. doi: 10.1111/j.1744-6570.2000.tb00214.x

Levine, D. (2013). Sexting: a terrifying health risk… or the new normal for young adults?

Journal of Adolescent Health, *52*(3), 257–258. doi: 10.1016/j.jadohealth.2013.01.003.

Machimbarrena, J. M., Calvete, E., Fernández-González, L., Álvarez-Bardón, A., Álvarez-

Fernández, L., & González-Cabrera, J. (2018). Internet risks: An overview of

victimization in cyberbullying, cyber dating abuse, sexting, online grooming and

problematic internet use. *International Journal of Environmental Research and Public

Health, 15*(11), 2471. doi: 10.3390/ijerph15112471

Madigan, S., Ly, A., Rash, C. L., Van Ouytsel, J., & Temple, J. R. (2018). Prevalence of

multiple forms of sexting behavior among youth: A systematic review and meta-

analysis. *JAMA Pediatrics*, *172*(4), 327–335. doi:10.1001/jamapediatrics.2017.5314

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual

populations: conceptual issues and research evidence. *Psychological Bulletin*, *129*(5),

674. doi: 10.1037/0033-2909.129.5.674

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2016a). Sexting,

psychological distress and dating violence among adolescents and young adults.

Psicothema, *28*(2), 137–142. doi: 10.7334/psicothema2015.193

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2016b). Not-allowed

sharing of sexts and dating violence from the perpetrator's perspective: The moderation

role of sexism. *Computers in Human Behavior*, *56*, 163–169. doi:

10.1016/j.chb.2015.11.047

Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2017). Sexting

behaviors and cyber pornography addiction among adolescents: The moderating role of

alcohol consumption. *Sexuality Research and Social Policy*, *14*(2), 113–121. doi:
10.1007/s13178-016-0234-0

Morelli, M., Bianchi, D., Cattelino, E., Nappa, M. R., Baiocco, R., & Chirumbolo, A. (2017).
Quando il Sexting diventa una forma di violenza? Motivazioni al sexting e dating
violence nei giovani adulti. [When sexting becomes a kind of dating violence? Sexting
motivations and dating violence among young adults]. *Maltrattamento e Abuso
all'infanzia*. doi: 10.3280/MAL2017-003004

Mori, C., Cooke, J. E., Temple, J. R., Ly, A., Lu, Y., Anderson, N., ... & Madigan, S. (2020).
The prevalence of sexting behaviors among emerging adults: A meta-analysis. *Archives
of Sexual Behavior, 49,* 1–17. doi: 0.1007/s10508-020-01656-4

Mori, C., Temple, J. R., Browne, D., & Madigan, S. (2019). Association of sexting with
sexual behaviors and mental health among adolescents: A systematic review and meta-
analysis. *JAMA Pediatrics*, *173*(8), 770–779. doi:10.1001/jamapediatrics.2019.1658

Ojeda, M., Del Rey, R., & Hunter, S. C. (2019). Longitudinal relationships between sexting
and involvement in both bullying and cyberbullying. *Journal of Adolescence, 77*, 81–
89. doi: 10.1016/j.adolescence.2019.10.003

Olatunde, O., & Balogun, F. (2017). Sexting: Prevalence, predictors, and associated sexual
risk behaviors among postsecondary school young people in Ibadan, Nigeria. *Frontiers
in Public Health*, *5*, 96. doi: 10.3389/fpubh.2017.00096

Patchin, J. W., & Hinduja, S. (2020). It is time to teach safe sexting. *Journal of Adolescent
Health*, *66*(2), 140–143. doi: 10.1016/j.jadohealth.2019.10.010

Pikálková, S. (2012). Violence Against Women in Intimate Partnerships: First Findings of
Follow-up Research to IVAWS 2003. *Acta Universitatis Carolinae Philosophica et
Historica*, *18*(2), 85–100.

Pinchoff, J., Boyer, C. B., Mutombo, N., Chowdhuri, R. N., & Ngo, T. D. (2017). Why don't

urban youth in Zambia use condoms? The influence of gender and marriage on non-use

of male condoms among young adults. *PloS one*, *12*(3). doi:

10.1371/journal.pone.0172062

Pistella, J., Ioverno, S., & Russell, S. T. (2019). The role of peer victimization, sexual

identity, and gender on unhealthy weight control behaviors in a representative sample of

Texas youth. *International Journal Of Eating Disorders*, *52*(5), 597–601. doi:

10.1002/eat.23055

Rice, E., Gibbs, J., Winetrobe, H., Rhoades, H., Plant, A., Montoya, J., & Kordic, T. (2014).

Sexting and sexual behavior among middle school students. *Pediatrics*, *134*(1), e21–28.

doi:10.1542/peds.2013-2991

Rice, E., Craddock, J., Hemler, M., Rusow, J., Plant, A., Montoya, J., & Kordic, T. (2018).

Associations between sexting behaviors and sexual behaviors among mobile phone-

owning teens in Los Angeles. *Child Development*, *89*(1), 110–117. doi:

10.1111/cdev.12837

Rolison, J. J., Hanoch, Y., & Gummerum, M. (2013). Characteristics of offenders: the

HEXACO model of personality as a framework for studying offenders' personality. *The

Journal of Forensic Psychiatry & Psychology*,*24*,71–82. doi:

10.1080/14789949.2012.752024.

Romer, D., & Hennessy, M. (2007). A biosocial-affect model of adolescent sensation seeking:

the role of affect evaluation and peer-group influence in adolescent drug use. *Prevention

Science, 8*(2), 89–102. doi:10.1007/s11121-007-0064-7.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009).

Personality and motivations associated with Facebook use. *Computers in Human

Behavior, 25,* 578–586. doi: 10.1016/j.chb.2008.12.024

Swickert, R. J., Hittner, J. B., Harris, J. L., & Herring, J. A. (2002). Relationships among

Internet use, personality, and social support. *Computers in Human Behavior,18*, 437–

451. doi: 10.1016/S0747-5632(01)00054-1

Symons, K., Ponnet, K., Walrave, M., & Heirman, W. (2018). Sexting scripts in adolescent

relationships: Is sexting becoming the norm? New media and society, 20, 10, 3936-

3857. doi: 10.1177/1461444818761869

Temple, J. R., Le, V. D., van den Berg, P., Ling, Y., Paul, J. A., & Temple, B. W. (2014).

Brief report: Teen sexting and psychosocial health. *Journal of Adolescence*, *37*(1), 33–

36. doi: 10.1016/j.adolescence.2013.10.008

Terzioglu, F., Kok, G., Guvenc, G., Ozdemir, F., Gonenc, I. M., Hicyilmaz, B. D., & Sezer,

N. Y. (2018). Sexual and reproductive health education needs, gender roles attitudes

and acceptance of couple violence according to engaged men and women. *Community

Mental Health Journal*, *54*(3), 354–360. doi: 10.1007/s10597-017-0227-3

Toplu-Demirtaş, E., Hatipoğlu-Sümer, Z., & Murphy, C. M. (2018). Turkish version of the

multidimensional measure of emotional abuse: preliminary psychometrics in college

students. *Violence and Victims*, *33*(2), 275–295. doi: 10. 1891/ 0886- 6708. VV- D- 16-

00087

Turchik, J. A., Garske, J. P., Probst, D. R., & Irvin, C. R. (2010). Personality, sexuality, and

substance use as predictors of sexual risk taking in college students. *Journal of Sex

Research*, *47*(5), 411–419. doi: 10.1080/00224490903161621

Van Ouytsel, J., Lu, Y., Ponnet, K., Walrave, M., & Temple, J. R. (2019). Longitudinal

associations between sexting, cyberbullying, and bullying among adolescents: Cross-

lagged panel analysis. *Journal of Adolescence, 73,* 36–41. doi:

10.1016/j.adolescence.2019.03.008

Van Ouytsel, J., Walrave, M., & Ponnet, K. (2019). An exploratory study of sexting behaviors

    among heterosexual and sexual minority early adolescents. *Journal of Adolescent*

    Health, 65(5), 621–626. doi: 10.1016/j.jadohealth.2019.06.003

Van Ouytsel, J., Van Gool, E., Walrave, M., Ponnet, K., & Peeters, E. (2017). Sexting:

    adolescents' perceptions of the applications used for, motives for, and consequences of

    sexting. *Journal of Youth Studies*, *20*(4), 446–470. doi:

    10.1080/13676261.2016.1241865

Van Ouytsel, J., Van Gool, E., Ponnet, K., & Walrave, M. (2014). Brief report: The

    association between adolescents' characteristics and engagement in sexting. *Journal of*

    Adolescence, *37*(8), 1387–1391. doi: 10.1016/j.adolescence.2014.10.004

Vanden Abeele, M., Campbell, S. W., Eggermont, S., & Roe, K. (2014). Sexting, mobile porn

    use, and peer group dynamics: Boys' and girls' self-perceived popularity, need for

    popularity, and perceived peer pressure. *Media Psychology*, *17*(1), 6–33. doi:

    10.1080/15213269.2013.801725

Walrave, M., Heirman, W., & Hallam, L. (2014). Under pressure to sext? Applying the theory

    of planned behaviour to adolescent sexting. *Behaviour & Information Technology*,

    33(1), 86–98. doi: 10.1080/0144929X.2013.837099

Weller, J. A., & Thulin, E. W. (2012). Do honest people take fewer risks? Personality

    correlates of risk-taking to achieve gains and avoid losses in HEXACO space.

    Personality and Individual Differences, *53*(7), 923–926. doi:

    10.1016/j.paid.2012.06.010

Wolak, J., & Finkelhor, D. (2011). Sexting: A typology. *Research Bulletin (March),*

    University of New Hampshire: Crimes Against Children Research Center.

Wolak, J., Finkelhor, D., & Mitchell, K. J. (2012). How often are teens arrested for sexting? Data from a national sample of police cases. *Pediatrics*, *129*(1), 4–12. doi: 10.1542/peds.2011-2242

Ybarra, M. L., & Mitchell, K. J. (2016). A national study of lesbian, gay, bisexual (LGB), and non-LGB youth sexual behavior online and in-person. *Archives of sexual behavior, 45*(6), 1357–1372. doi: 10.1007/s10508-016-0767-6