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Articles

The Relationship between Sexting, Risky Sexual Behaviour and Features of Borderline Personality Disorder

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Abstract

Objective: The aim of this cross-sectional study was to examine the relationship between sexting, risky sexual behaviour, and features of borderline personality disorder.

Subject and methods: The study, conducted in Bosnia and Herzegovina and Croatia, involved 265 people (70 males and 195 females) ranging in age from 17 to 25 years, with an average age of $M = 23.57$ ($SD = 3.2$). Participant completed The Intimate Images Diffusion Scale among Adolescents, the Sexual Risk Behaviour Scale, and a Borderline Symptom Questionnaire (BSL-23).

Results: The results of this study show that individuals who reported participating in sexting scored higher on the BSL-23. Those who participate in sexting are less likely to use protection during sexual activity, are more likely to change sexual partners, and they are more likely to engage in sexual activity under the influence of alcohol and narcotics. The features of borderline personality disorder, the number of sexual partners in the last 6 months, use of condoms, and sexual activity under the influence of alcohol have been shown to be significant predictors of participation in sexting.

Conclusion: The results obtained indicate that mobile phones and internet make it easier the development of problematic patterns of behaviour, and for experiencing negative psychological consequences.

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1. Introduction

In the last decade, continuous progress and rapid changes in the world of digital media have had a significant impact on various areas of the functioning of young people, including sexual behaviour (Kosenko et al., 2017). In this context, there is an increasing activity creating and

exchanging sexually explicit content through electronic media, which we call sexting (Gassó et al., 2019). Definitions of sexting range from wide definitions, which include sending any kind of sexually explicit content, to narrower definitions based only on the exchange of nude/semi-nude photos or the exchange of sexually suggestive text messages via mobile phones, the Internet and/or any other form of technology (Barrense-Dias et al., 2017; Klettke et al., 2014).

Differences in the prevalence of sexting are the result of the differences in defining sexting between authors, the research methodology, and the characteristics of the research participants (Scholes-Balog et al., 2016). Some research shows that between 30% and 89% of young people participate in sexting (Klettke et al., 2014; Scholes-Balog et al., 2016). From a review of recent research on the prevalence of sexting in the Republic of Croatia, it was found that 33.7% to 64.4% of young people had participated in sexting (Burić et al., 2018; Kričkić et al., 2017). The results of recent research in Bosnia and Herzegovina (Sesar & Dodaj, 2019) show that 23.64% of young people stated that they had received or sent a message of sexually explicit content, while 10.23% of participants stated that they had published sexually explicit content. The results of studies of sex differences in sexting have produced inconsistent results. Some researchers found that young men in general engage in sexting more often than young women (Jonsson et al., 2014; Morelli et al., 2016) whilst some did not find any differences between young men and young women in terms of participation in sexting (Dir et al., 2013; Drouin & Landgraff, 2012).

There are two different ways of “understanding” sexting according to a review of the literature. One group of authors describes sexting as a contemporary form of intimate communication between young people (Hudson & Marshall, 2018), “normal” behaviour in adolescent relationships (Ybarra & Mitchell, 2014), or as consensual behaviour in which both sides participate without coercion (Levine, 2013). According to another group of researchers (Choi et al., 2016; Walrave et al., 2018), sexting is related to certain risk factors and negative outcomes. Sexting is sometimes used as a tool for blackmailing (Kopecký, 2014) or even as a tool for revenge on ex-partners (Walker et al., 2013). Besides that, young people who participate in sexting have a higher risk of engaging in risky sexual behaviours (Gordon-Messer et al., 2013).

Risky sexual behaviour (RSB) is complex to define as it depends on a number of factors and can be considered from different perspectives. The most common standardized indicators used in research on RSB are: use of a condom during the latest sexual intercourse; consistent use of condoms with a certain type of partner (usually in the last month); the number of sexual partners (in total and / or in the last year); and drug and / or alcohol consumption immediately before sexual intercourse (Ezzati et al., 2004). Sexual activity by young people often turns into

RSB, which includes a wide range of behaviours that increase exposure to immediate and often long-term negative consequences for those involved in sexual activities. The negative consequences of sexual contact are most often categorized as: unwanted pregnancy, sexually transmitted infections (STIs), and sexual violence (victimization) (Štulhofer, 1999). What contributes to the riskiness of this behaviour is the illusion of invulnerability, the tendency to hedonism, the tendency to experiment, and high impulsivity (Štulhofer, 2009). In addition, peers and the omnipresent appearance of sexually explicit content in the media can encourage young people to engage in RSB (O'Hara et al., 2012). When it comes to gender differences, it is young men who, on average, have more positive attitudes towards incidental sex, are more prone to short-term relationships, and are more sexually active than girls (Schmitt, 2005). This leads to the generally accepted opinion that young men engage in RSB largely than girls, and in this way young men achieve an enviable social reputation. However, from generation to generation, it is evident that there is a reduction in gender differences (Bancroft et al., 2004).

Borderline personality disorder (BPD) is a psychiatric syndrome that encompasses a wide range of symptoms that include: inadequate emotional regulation with distinct impulsivity, irritability, feelings of emptiness, fear of abandonment, and unstable interpersonal relationships (Sanislow et al., 2002). Impulsivity may manifest in a variety of life areas, including RSB, spending behaviour, substance usage, driving, and eating (Sanislow et al., 2002). It should be noted, however, that representatives of the European, International, and North American Societies for the Study of Personality Disorders have expressed major concerns about BPD in ICD-11 (International Classification of Diseases-11), leading to its removal from the ICD classification and classification as a qualifier for borderline patterns (see Herpertz et al., 2017). Some researchers (Scull, 2019) went further and interpreted borderline structure and function as a product of the social environment.

Individuals with BPD are more likely to exhibit greater sexual preoccupation, have earlier sexual exposure, engage in casual sexual relationships, report a greater number of different sexual partners as well as promiscuity, and engage in homosexual experiences, compared to individuals without BPD (Sansone & Sansone, 2011). In addition, BPD has been found to be associated with a greater number of RSB, a greater likelihood of coercion for sex, date rape or rape by a stranger, and a greater number of STDs (Chen et al., 2007). Overall, the psychological themes relating to sexual behaviour in BPD appear to be characterized by impulsivity and victimization (Sansone & Sansone, 2011).

When it comes to the relationship between sexting, RSB and BPD, the results of some research show that there is a correlation between these variables. The results of research consistently show that participation in sexting is associated with increased sexual activity (Klettke et al., 2014). Sext recipients are on average three times more sexually active than non-sexters, and those who receive and send sexually explicit content are fourteen times more sexually active than persons who do not participate in sexting (Gordon-Messer et al., 2013). Furthermore, people who participate in sexting are more likely to engage in RSB than those who have never participated in sexting (Dake et al., 2012; Klettke et al., 2014). They are more prone to having sex earlier, have more sexual partners, have more sex without contraception, use opiates more often, and have sex under the influence of psychoactive substances (Brinkley et al., 2017). Certain features of borderline personality, such as inappropriate emotional expression and mood responses, may be exacerbated in ambiguous relationship situations, such as texting about hypothetical sex (Brinkley et al., 2017). The results of research conducted so far, among other things, show that sending sexually suggestive messages is related to some aspects of impulsivity, especially sexual impulsivity (Champion & Pedersen, 2015; Ybarra & Mitchell, 2014). High levels of impulsivity are one of the features of both BPD and RSB (Black et al., 2009), which may indicate an association between these variables. Thus, the aim of this study was to examine the relationship between sexting, RSB and BPD in Croatian and Bosnian and Herzegovina young adults.

2. Subjects and methods

The cross-sectional study, conducted in Bosnia and Herzegovina and Croatia, involved 281 people aged 17 to 25 years. The results of 15 participants over the age of 25 were excluded from further analysis. Also, the results of one participant, where distortion of the results was noticed, were excluded from further analysis (the question: *"Indicate the number of sexual partners in the last 6 months"* was answered with: *"a thousand"*).

With the prior approval of the Ethics Committee of the Psychology Department of the Faculty of Humanities and Social Sciences of the University of Mostar, the research was conducted via an on-line survey (Google Forms) published on Facebook, Instagram and WhatsApp, with an invitation to pass it on to other potential participants. Informed consent was obtained from all participants involved in the study. Before completing the questionnaire, participants were asked to read a short guide explaining the purpose of the research. Participation in the survey was voluntary, completely anonymous, and participants could withdraw from it at any time. In addition, the instructions at the beginning and at the end of the questionnaire provide the e-

mail address of the author of the research. Furthermore, researchers provide the link of the student-counselling centre of the University of Mostar, which could be contacted by participants who may have felt uncomfortable during the research. The average time to complete the questionnaire was 10 minutes.

2.1 Instruments

The Intimate Images Diffusion Scale among Adolescents (Escala de Difusión de Imágenes Íntimas entre Adolescentes, EDIMA) (Penado et al., 2019) is a scale consisting of 20 items divided in two subscales. Subscales were based on the nature of the interaction with the sexting contents: instant messaging services through mobile devices or through digital platforms such as social networks. Items related to the reception, sending, requesting and re-sending of images and videos of intimate and personal content to partners, strangers, friends and, in general, without identifying the person, made through messaging services or chats installed on mobile phones represent the first subscale (16 items). The second subscale focuses on the frequency with which subjects published images and videos of personal and intimate content through social networks (Instagram or Facebook, among others) of their partners, a stranger, friend or acquaintance or their own (4 items). The scale distinguished if those images were of the person who published them, of people with whom an intimate relationship was being maintained, acquaintances or a complete stranger, to evaluate all the behaviours that can be performed with those images (sending, receiving, requesting, or re-sending). Participants indicated for each of the items presented the frequency with which they had performed each of the behaviours according to a Likert 5 point scale (1-Never, 2-Rarely (one or twice a month), 3-Occasionally (2 or 3 times a month), 4-Often (2 or 3 times a week), 5-Frequently (Every day)). The total result is formed by a simple linear combination of responses to 20 items. The Cronbach alpha reliability of the scale according to the authors was $\alpha = .98$ (Penado et al., 2019). In this research, the original structure of the scale was confirmed with the Cronbach alpha reliability of the scale was $\alpha=.93$.

Risky sexual behaviour (RSB) was operationalized through five item scale (Makgale & Plattner, 2017) measuring: whether or not participants had engaged in unprotected sex upon their latest sexual intercourse; the number of sexual partners over the past 6 months prior to the study; whether or not participants had (over the past three months) had sexual intercourse under the influence of alcohol; whether or not participants had (over the past three months) had sexual intercourse under the influence of drugs; and whether or not they had ever been diagnosed with a sexually transmitted infections (STIs). The Cronbach alpha internal reliability of the scale

according to the authors was low ($\alpha = .55$). Our analysis confirms one-factor structure of the scale. However, because the internal consistency reliability for the five questions probing into RSB in this research was low ($\alpha = .62$) the items were analysed separately with regard to sexting. The Borderline Symptom List 23 (BSL-23) (Bohus et al., 2009) is a self-rating instrument to assess different facets of Borderline Personality Disorders. BSL-23 was translated from English to Croatian, and an independent English-speaking translator back translated the Croatian version into English. It consists of 23 items related to feelings and experiences typically reported by BPD patients, referring to the previous week. In its original form, the BSL-23 presents a one-factor structure. Ratings are given on a 5-point Likert scale, where the numerical values have the following meaning: 0 - not at all to 4 - very strong. The overall well-being of the participants can be assessed by one visual analog scale using a Likert type-rating format from 0 % meaning “absolutely down/very bad” to 100 % meaning “excellent”. The Cronbach alpha internal reliability of the scale according to the authors was very good (Cronbach’s alpha = .97) (Bohus et al., 2009). We identified a unidimensional scale and the high Cronbach alpha coefficient of internal reliability ($\alpha = .93$).

Demographic variables included sex and age.

2.1 Statistical analysis

Data are presented as the mean (M) and standard deviation (SD) or as numbers and percentages, as appropriate. Before statistical data analysis, for testing the normality of the distribution, the Kolmogorov-Smirnov test and the Shapiro-Wilks test were used. Considering this, non-parametric procedures were applied in further analysis. The Mann-Whitney U test was used to test differences in the tendency towards engaging in sexting, RSB, and the severity of BPD features regarding gender; and between those who participate and those who do not participate in sexting. Spearman's correlation coefficient was used to test the significance of the correlation between sexting, RSB, and features of BPD. Multiple linear regression was used to determine the predictive contribution of RSB and features of BPD in explaining the tendency to participate in sexting, as a criterion variable. For the purpose of data processing, the statistical program IBM SPSS Statistics 20 was used.

3. Results

The final sample consisted of 265 participants (70 female, 195 male), aged from 17 to 25 years ($M = 23.6$, $SD = 3.2$).

Using the Mann-Whitney test, we found a statistically significant difference between men and women in terms of participation in both categories of sexting (Table 1). Men were more likely to participate in the exchange of photos via mobile devices, and were more likely to post photos via social media compared to women. No statistically significant difference was found between men and women in the mean values on the scale examining the feelings and experiences that can typically be determined in people with features of BPD. A statistically significant difference was found in some aspects of RSB between men and women. Young men are more likely to have sex under the influence of alcohol and drugs than women are.

Table 1. Differences in the tendency to engage in sexting, RSB and the severity of the features of BPD regarding to gender

	Men		Women		Z	p
	Mean rank	Sum of ranks	Mean rank	Sum of ranks		
Sexting						
Mobile phone	158.63	11104.00	123.80	24141.00	-3.41	.00*
Social networks	147.29	10310.50	127.87	24934.50	-3.66	.00*
Features of BPD						
	131.99	9239.00	133.36	26006.00	-.13	.89
Risky sexual behaviours						
Number of sexual partners over the past 6 months	145.06	10154.50	127.97	24825.50	-1.79	.07
Usage of condoms during the last sexual intercourse	135.34	9338.50	129.44	24852.50	-.59	.55
Sexual intercourse under the influence of alcohol	145.46	10182.50	128.53	25062.50	-1.89	.05*
Sexual intercourse under the influence of drugs	145.11	10157.50	128.65	25087.50	-3.04	.00*
Sexually transmitted infection (STI)	132.18	9252.50	133.29	25992.50	-.28	.78

* $p < .05$

Table 2 shows the results of the Mann-Whitney U test, which aimed to examine the differences in the tendency towards RSB and the severity of the features of BPD, regarding participation in sexting. A statistically significant difference was found in the expression of features of BPD

between participants who, based on their self-assessment, were categorized as persons who participate and persons who do not participate in sexting. In both categories of sexting, persons reporting participation in sexting scored higher on the BSL-23. In addition, a statistically significant difference was found in some aspects of RSB between persons who participate and those who do not participate in sexting regarding the category of sexting. Persons who participate in sexting are less likely to use sexual protection, more likely to change sexual partners, and more likely to engage in sexual intercourse under the influence of alcohol and drugs. In the category of photo sharing via mobile devices, no statistically significant difference was found in diagnosis of STIs between persons participating and persons not participating in sexting.

Table 2. Differences in the tendency to engage in RSB and the expression of BPD features considering participation in sexting

		Sexting					
		Mobile phone			Social networks		
		Mean rank	Z	p	Mean rank	Z	p
Features of BPD	Not participating	115.29	-3.32	.00*	127.76	-3.53	.00*
	Participating	146.79			185.60		
Risky sexual behaviours							
Number of sexual partners over the past 6 months	Not participating	109.03	-4.95	.00*	126.52	-4.51	.00*
	Participating	150.90			129.29		
Usage of condoms during the last sexual intercourse	Not participating	105.07	-5.29	.00*	126.80	-3.03	.00*
	Participating	151.42			172.46		
Sexual intercourse under the influence of alcohol	Not participating	103.56	-6.57	.00*	128.63	-3.50	.00*
	Participating	155.92			176.85		
Sexual intercourse under the influence of drugs	Not participating	123.93	-3.36	.00*	128.20	-6.39	.00*
	Participating	140.06			181.23		
Sexually transmitted infection (STI)	Not participating	129.93	-1.54	.12	130.35	-4.77	.00*
	Participating	135.39			159.63		

* $p < .05$

The Spearman correlation coefficient and the point-biserial correlation coefficient were used to test the significance of the correlation between sexting, RSB, and features of BPD (Table 3). A statistically significant positive correlation was found between the variable features of BPD and both categories of sexting. Individuals who reported a greater tendency to participate in sexting scored higher on the BSL-23. Furthermore, a statistically significant positive correlation was found between the variable of RSB and the tendency to participate in both categories of sexting (*use of condoms during the latest sexual intercourse, the number of sexual partners over the past 6 months, sexual intercourse under the influence of alcohol, sexual intercourse under the influence of drugs, and STIs*). The results suggest that participants who engage in sexting to a greater extent are more likely to engage in RSB. Specifically, they are less inclined to use protection during sexual intercourse, they are more inclined to change sexual partners, they are more likely to engage in sexual intercourse under the influence of alcohol and drugs, and they are more often diagnosed with STIs. Considering that the variables *use of condoms during the latest sexual intercourse* (I did not have sexual intercourse: code 0; Yes: code 1; No: code 2); *Sexual intercourse under the influence of alcohol*; *Sexual intercourse under the influence of narcotics*; and *STIs* in this study were examined with a dichotomous variable (No: code 0 / Yes: code 1), these correlations could be interpreted so that a higher code indicates a greater tendency to engage in RSB. According to the height of the correlation coefficient, the correlations obtained were low to moderate.

Table 3. Correlation between sexting, RSB and features of BPD

		Features of BPD	Number of sexual partners over the past 6 months	Usage of condoms during the last sexual intercourse*	Sexual intercourse under the influence of alcohol*	Sexual intercourse under the influence of drugs*	Sexually transmitted infections (STIs)*
Sexting	Mobile phone	.26**	.42**	.40**	.50**	.34**	.16**
	Social networks	.22**	.28**	.19**	.22**	.39**	.31**

** $p < .01$; * a point-biserial correlation coefficient was used for the calculation

Multiple linear regression analysis was used to determine the predictive contribution of RSB and features of BPD in the explanation of the tendency to participate in sexting as a criterion variable (Table 4). Before performing the regression analysis, reviewing the variance inflation factor (VIF) for each predictor, it was determined that the precondition for the absence of multicollinearity was satisfied.

Table 4. Multiple regression analysis of possible predictors of sexting behaviour

Predictors	Mobile phone			Social networks		
	<i>B</i>	β	<i>p</i>	<i>B</i>	β	<i>p</i>
Features of BPD	.00	.15	.00*	.00	.12	.01*
Number of sexual partners over the past 6 months	.20	.50	.00*	.10	.55	.00*
Usage of condoms during the last sexual intercourse	-.01	-.02	.77	-.05	-.20	.00*
Sexual intercourse under the influence of alcohol	.21	.21	.00*	-.07	-.16	.00*
Sexual intercourse under the influence of drugs	.16	.09	.09	.08	.10	.06
Sexually transmitted infection (STI)	-.09	-.04	.45	.32	.29	.00*
R ²	.46			.46		

Footnote: *B* – the value of the non-standardized regression coefficient; β - the value of the standardized regression coefficient; R² - coefficient of multiple determination – percentage of criterion variance explained by predictors; **p* < .01.

Examining the predictor contribution of variables for the subscale *mobile phone*, the statistically significant contribution of predictors of BPD and some aspects of RSB (the number of sexual partners over the past 6 months, sexual intercourse under the influence of alcohol) was found in explaining the variance of the tendency to participate in sexting via a mobile phone. The percentage of criterion variance explained by predictors was 46%. The variables *condom use during the latest sexual intercourse*, *sexual intercourse under the influence of drugs* and *STIs* did not prove to be significant predictors of participation in the exchange of sexually explicit content via mobile phones.

Examining the predictor contribution of variables for the subscale *social networks*, the statistically significant contribution of BPD features and some aspects of RSB was found in explaining the variance of the tendency to participate in sexting. The variables: *features of BPD*, *the number of sexual partners over the past 6 months*, *the use of condoms during the latest sexual intercourse*, *sexual intercourse under the influence of alcohol*, and *STIs* - proved to be significant predictors of participation in sexting. The percentage of criterion variance explained by the predictors was 46%, where the largest share in explaining variance is the number of sexual partners over the past 6 months ($\beta = .55$), which indicates that participants who are more inclined to change sexual partners

reported a greater tendency to publish sexually explicit content via social networks. The variable *sexual intercourse under the influence of drugs* was not proven to be a significant predictor in publishing sexually explicit content via social networks.

Multiple linear regression analysis was performed to determine the predictive contribution of sexting participation and RSB in explaining the features of BPD as a criterion variable (Table 5). The statistically significant contribution of predictors of participation in sexting and some aspects of RSB (*the number of sexual partners over the past 6 months, sexual intercourse under the influence of narcotics*) was found in explaining the variance of BPD features. The percentage of criterion variance explained by predictors is 9%. The variables *condom use during the last sexual intercourse, sexual intercourse under the influence of alcohol* and *STIs* did not prove to be significant predictors of the features of BPD.

Table 5. Multiple regression analysis of possible predictors of BPD features

Predictors	<i>B</i>	β	<i>p</i>
Sexting	.72	.28	.00*
Number of sexual partners over the past 6 months	-2.92	-.19	.02*
Usage of condoms during the last sexual intercourse	.86	.04	.60
Sexual intercourse under the influence of alcohol	-.14	-.00	.97
Sexual intercourse under the influence of drugs	9.86	.16	.03*
Sexually transmitted infection (STI)	.54	.01	.92
<i>R</i> ²		.09	

Footnote: *B* – the value of the non-standardized regression coefficient; β - the value of the standardized regression coefficient; *R*² - coefficient of multiple determination – percentage of criterion variance explained by predictors; **p* <.01.

4. Discussion

According to the results of our research, young men more often share photos via mobile phones and post them via social networks compared to young women. These results are in line with the results of research conducted so far, which indicate the more frequent participation of boys in the exchange of sexually explicit content compared to girls (Dodaj et al., 2020; Sesar & Dodaj, 2019). The results obtained in our study can be explained by the gender differences that are

present in attitudes towards sexting behaviour, according to which it is acceptable for young men to participate in the exchange of sexually explicit content. Furthermore, sexting can have more harmful consequences for women, as they are more likely to be offended and humiliated, and their reputations are more affected (Wood et al., 2015), while for male it can even have positive consequences, such as gaining popularity and the value of their "masculinity" by showing sexts to others (Burén & Lunde, 2018; Marganski, 2017). In addition, young men are more likely to take risks and test their limits, including RSB (Schmitt, 2005). According to some authors, sexting is categorized as a form of RSB, and therefore the more frequent activity of boys in the exchange of sexually explicit content compared to girls is expected (Gassó et al., 2019).

According to the results of our research, young men are more likely to have sex under the influence of alcohol and other psychoactive substances than girls, which confirms the results of previous research (Puente et al., 2011). Whatever the reasons for consuming alcohol and other psychoactive substances, before or during sexual intercourse, their effects will certainly contribute to risky decision-making (Bechara et al., 2001) and RSB, such as making use of contraceptives less likely, and a higher risk of contracting STIs (Heiligenberg et al., 2012). Therefore, it is very important to strengthen existing prevention programs to ensure that young people practice safer sex, or avoid alcohol and other psychoactive substances before and during sexual activity (Olatunde & Balogun, 2017).

In our study, no statistically significant difference was found between the mean values of BPD features between young men and women, which is in line with epidemiological studies that found no gender differences in the incidence of the BPD (Grant et al., 2008; Lenzenweger et al., 2007). In contrast to the results of our study, some previous study (Coid et al., 2006) found a higher incidence of BPD among men compared to women in the UK (1% vs. 0.4%). At the same time, the findings of clinical trials suggest a higher incidence of BPD among women (American Psychiatric Association, 2013). Gender differences in the prevalence of BPD in the clinical setting are due to sampling bias, and that the actual incidence of BPD by gender is still unknown (Skodol & Bender, 2003). However, research also shows that men are less represented in BPD clinical trials, and in order to determine the exact prevalence of BPD based on gender future clinical and epidemiological studies are needed in which participants are equally represented by gender (Silberschmidt et al., 2015).

The results of this study show that young people who report participating in sexting, whether by sharing photos via mobile phones or posting content on social media, are more prone to RSB compared to participants who do not participate in sexting. Differences were found for

almost all aspects of RSB that were examined, except for STIs. A review of research conducted so far shows that a number of studies have focused on examining the association between sexually RSB and sexting, but the results are inconsistent (Ferguson, 2011; Gordon-Messer et al., 2013). Some studies have found a strong correlation between sexting and RSB (Madigan et al., 2018; Mori et al., 2019) while in others no correlation was established (Gordon-Messer et al., 2013). Some scholar (Champion & Pedersen, 2015) state that by participating in sexting, young people seek to confirm their sexual attraction and improve their social status within a peer group. Precisely because of the need to belong, and achieve greater social status, young people are increasingly subject to the "hook-up" culture in which occasional sexual partners, one-night stands without emotional intimacy etc. are not perceived as RSB (Zloković & Vrcelj, 2010). Thereby, the exchange of sexually explicit content is often the first step in initiating offline sexual activities (Temple et al., 2014). Furthermore, sexting should actually be seen as an integral part of real sexual intercourse in emerging adulthood, but also that the established association between sexting and RSB puts young people at risk for STIs and unplanned pregnancy, and this should be taken into account when creating educational programs (Davis et al., 2016).

In this study, a statistically significant difference was found in the expression of the BPD features between those who participate and those who do not participate in sexting. Persons who reported participating in sexting scored higher on the BSL-23. BPD is characterized by poor impulse control, emotional instability, dysfunctional relationships, and intense avoidance of situations and circumstances that could lead to a person being abandoned (Hill et al., 2011). Text messages give the impression of a constant connection, and therefore, by texting or sending pictures, people with BPD can seek reassurance and safety from others. In young people with features of BPD, frequent participation in sexting can increase fear of abandonment, impulsivity, and an intense need for a relationship (Bechara et al., 2001). Given the very small number of studies in this area, the results of our study can be partially related to the results of some previous studies (Ferguson, 2011). The results of this study showed that sexual preoccupation visible in "sexting" behaviour (sending or receiving sexually explicit content) was more common in women diagnosed with histrionic personality disorder that belongs to the same cluster of personality disorders as BPD.

According to the results of our research, participation in the exchange of sexually explicit content, sexual relations under the influence of opiates and the number of sexual partners are statistically significant predictors of the features of BPD. These results confirm the results of previous study (Brinkley et al., 2017), who found that participation in sexting at age 16 was a

predictor of BPD at age 18. The authors state that frequently engaging in sexting could exacerbate vulnerable adolescents' fears of abandonment, impulsivity, the desperate need to have enmeshed relationships, and a sense of self that relies on attention from others. Adolescents who engage in sexting may receive peer reinforcement for impulsive, seeking reassurance and safety from others, and this may further contribute to the emergence of BPD features. This is consistent with the assumption that the social environment has a major influence on the development of our psychopathological characteristics (Scull, 2019), which may be important in creating a stimulating environment in which these psychopathological characteristics do not occur. Furthermore, other studies conducted so far have found an association between RSB and BPD symptoms (Sansone & Sansone, 2011). Impulsivity, which is one of the main features of the clinical picture of BPD, probably contributes to the fact that young people at risk of developing BPD are also more prone to RSB and participation in sexting, which some authors also consider as RSB.

Features of BPD and some aspects of RSB are predictors of participation in sexting (sharing via mobile phones and posting on social networks). Several studies have examined the relationship between personality traits and sexting (Brinkley et al., 2017), others have examined the relationship between sexting and RSB (Dake et al., 2012; Ybarra & Mitchell, 2014) and the relationships between these variables were found. Only one research conducted so far (Brinkley et al., 2017) has examined the relationship between sexting, RSB, and features of BPD. The authors found that participation in sexting at the age of 16 was associated with RSB and features of BPD at the age of 18. From the above, it can be concluded that certain psychological aspects are related to sexting, either as predictors of sexting or as consequences (Gassó et al., 2019). Our data suggest that we should prevent deviant, nonconsensual forms of sexting (forced and violent sexting, Dodaj & Sesar, 2020), which have been shown to be associated with negative consequences such as humiliation and reputational harm (Dodaj et al., 2022). We should intervene by increasing the extent to which youth believe they are in control of their lives (Myles & Merlo, 2022). For example, if they believe they have control over their decision to participate in sexting, they could make a decision that contributes to developing fewer problematic behaviours and experiencing fewer negative psychological consequences, because a lower desire for control and lower perceived control are known to contribute to lower psychological well-being, such as the presence of depression (Myles et al., 2020). Therefore, social factors (e.g., pressure on men to build muscle and lose fat has been shown to increase body satisfaction) may cause psychological difficulties, i.e., eating disorders (Spratt et al., 2022). However, psychological outcomes may be significantly related to physical outcomes (Myles & Merlo, 2021). Therefore,

it is important to intervene early because different aspects of body image develop at different rates in infancy and childhood, with body image maturing to an adult-like state in early adolescence (Myles, 2022).

Although the obtained results clearly support existing research about sexting, it is important to point out several potential limitations that may have affected the results. The first limitation concerns the sample itself, which is mostly made up of students, and does not represent the general population, thus reducing the possibility of generalization. Another potential limitation concerns the definition of sexting and RSB, and the definitions vary greatly from research to research, which in turn leads to difficulties in comparison of results and a comprehensive understanding of these behaviours. When it comes to RSB, this research certainly did not cover all the potentially RSB, as they encompass a wide range of behaviours. Third, the research is based on the method of self-expression, and taking into account the sensitivity of the researched topic, the truthfulness of the answers is questionable due to the possibility of giving socially desirable answers or avoiding a completely honest answer. Fourth, it is a correlation study that provides insight only into the relationships between variables, and no conclusions can be drawn about the cause-and-effect relationships between the variables measured. It would be useful in future research to approach the subject longitudinally, which would shed some light on the causality of the relationship.

In terms of future research, and in order to understand the impact of sexting on RSB and BPD, it would be useful to expand the current findings with longitudinal research focusing on the complex and potentially interdependent factors underlying this relationship, such as impulsivity, emotional dysregulation, attachment style, and substance abuse. Such research can be very fruitful in the field of designing prevention and educational materials and programs intended for the general public, which promote safer use of technology, responsible sexual behaviour, and destigmatization of personality disorders. Such programs should include work on developing communication skills, providing strategies for managing problematic forms of sexting, such as sexting under pressure, providing strategies to reduce possible harm, conducting open discussions about the features of BPD, its psychological and social consequences, and thus, among other things, make it easier for people who are not in treatment to recognize their symptoms so that they can seek appropriate help.

5. Conclusion

In conclusion, the results of the research show that young men participate in sexting more often than women do. Gender differences in RSB and features of BPD were not found. Young people who reported participating in sexting reported more features of BPD and were less likely to use

sexual protection, reported more frequent sexual partner changes, and were more likely to engage in sexual intercourse under the influence of alcohol and drugs. The results suggest that those participants who engage in sexting to a greater extent are more likely to engage in RSB and have more pronounced features of BPD. Features of BPD and some aspects of RSB (the number of sexual partners over the past 6 months, sexual intercourse under the influence of alcohol, and sexual intercourse under the influence of narcotics) are statistically significant predictors of participation in sexting.

Ethical approval

Ethics Committee of the Psychology Department of the Faculty of Humanities and Social Sciences of the University of Mostar.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Conflict of interest statement

The authors declare that the research was conducted in the absence of any potential conflict of interest.

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Authors' contributions

Conception and design: MV, KS and AD; Acquisition of data: MV; Analysis and interpretation of data: MV, KS and AD; Drafting the article: KS, MV and AD; Revising it critically for important intellectual content: KS, AD and MV; Approved final version of the manuscript: KS, AD and MV.

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