

Young People Who Sext: The Role of Self-Esteem and Body-Esteem

Kristina Sesar¹, Arta Dodaj², Toni Jandrić¹

¹University of Mostar, Mostar, Bosnia and Herzegovina, ²University of Zadar, Zadar, Croatia

Correspondence: kristina.sesar@ff.sum.ba; Tel.: + 387 63 313 831

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Abstract

Objective – The aim of this research was to examine the relationship between sexting, self-esteem and body-esteem. **Subjects and Methods** – A total of 707 subjects participated in this study of which 138 were male and 551 female students from Bosnia and Herzegovina (N=395), and the Republic of Croatia (N=294). They completed a modified version of the Sexting Behaviours Scale, the State Self-Esteem Scale and the Body-Esteem Scale for Adolescents and Adults. **Results** – The results show that young men engage in sexting behaviour more often than girls, and that the exchange of sexually explicit content is most frequent between intimate partners. Persons who engage in sexting behaviour achieved lower results on the Self-Esteem Scale and higher results on the sub-scale of Body-Esteem Attribution. The results of binary logistic regression analysis show that sex is a significant predictor of receiving and/or forwarding semi-nude and/or nude photographs and video recordings. The relationship status was a significant predictor of receiving semi-nude and/or nude photographs and sending semi-nude and/or nude photographs and video recordings. Self-esteem was shown to be a significant predictor of sending semi-nude or nude photographs, whilst body-esteem attribution was shown to be a significant predictor of all forms of sexting behaviour. **Conclusion** – The obtained results indicate that preventive intervention aimed at strengthening a positive self-image could reduce the frequency of sexting amongst students.

Key Words: Sexting ■ Self-Esteem ■ Body-Esteem ■ Students ■ Young People.

Introduction

The internet and smartphones are the main social tools for adolescents and young people, and they are incorporated into all aspects of their life (1, 2). Digital technology provides new ways of developing and maintaining social relationships (3). Social interaction takes place through various applications, blogs, and social networks intended for communication between users, instead of going out and socializing outside the home (4). The virtual world is becoming part of everyday life, and it is difficult to separate it from real life (5, 6). All these new phenomena (internet dependence, internet violence, sexting, etc.) have been intensively researched over the two decades with the development of modern technology.

Over the past ten years, the attention of researchers has been focused on sexting, which usually relates to the use of digital devices, mobile phones, or computers to create and exchange messages and/or photographs of a sexual nature (5). Although the concept originally referred to sending sexually explicit photographs (7-10), some authors include other forms of activity in the definition of sexting, such as receiving (11), forwarding (12, 13) and publication (14-17) of sexually explicit content. Moreover, a difference exists in the content considered in the operationalization of sexting (18). Some authors (8, 19) believe that the object of sexting is only photographs, whereas others (7, 11, 20) also include text messages and/or video recordings of a sexual nature. In some research, sexting is limited to sending sexually suggestive photographs or

videos, in others nude or semi-nude photographs or video recordings are analysed, and in still others sexually explicit text messages, photographs and video recordings (21).

The results of the research conducted so far show that sexting is frequent amongst adolescents (22, 23). Madigan et al. (23) conducted a meta-analysis of 39 studies that examined the prevalence of sexting amongst adolescents aged up to 18 years. The mean prevalences of sending and receiving sexually explicit content were 14.8% and 27.4%, respectively. The prevalence of forwarding without consent was 12%. The prevalence increased with age and in more recent research, showing that mobile phones are increasingly being used to exchange sexts, instead of personal or laptop computers. Regarding the differences in sexting between girls and young men, the results of the research are not consistent. Most research has not found any differences in sexting in relation to gender (19, 24-27). However, a certain number of authors have reported the greater involvement of young men in comparison to girls (16, 22, 28-30), whilst others find that girls participate in sexting more often than boys (31).

Two opposing discourses are emerging in the literature regarding sexting. Some researchers regard sexting as a healthy normative behaviour within a relationship and another group of researchers suggesting it is a risky behaviour (32-34). The dominant attitude is that sexting is risky and deviant behaviour that requires intervention and preventive measures (19, 35-39). In contrast, the other group of authors see sexting as normal behaviour by adolescents, or a form of romantic interaction or seduction between adolescents (40). In our research, we view sexting as a deviant and risky behaviour, with negative consequences for development. Although there is increasing evidence that supports the perspective of normality (41), still an increasing number of authors are focusing their research on examining the potentially negative consequences of sexting and its relationship to problematic behaviour (32). Sexting is sometimes used as a tool for blackmailing young people (42), or even as a tool for revenge on ex-partners (43). Many studies link sexting with psychosocial difficulties (44 - 48), such

as depression (46-48) and/or anxiety symptoms (44, 45). Furthermore, young people who engage in sexting have a higher risk of engaging in risky sexual behaviours (49).

Self-esteem (SE) is a term that expresses the overall or general evaluation of one's own worth (50). People with high SE are more resistant to the influence of the environment which is not aligned with their own observations, and they resolve problems in more original ways than individuals with low SE. A subjective assessment of SE is related, therefore, to various manifestations of individual behaviour (51). The findings of previous studies have confirmed the relationship between a lower level of SE and risky sexual behaviour amongst young people (52-54). If we accept the stance that sexting is a form of risky sexual behaviour, it is to be expected that young people with generally lower SE could be engaged in sexting more often. However, the little research that has been conducted so far in this field gives inconsistent results. Whilst one group of researchers did not find that SE is a significant predictor of sexting (11, 55, 56), other more recent group research (41, 50) shows that young people who engage in sexting behaviour in general have lower SE.

Body-esteem (BE) is a culturally sensitive construct, and it is defined as the self-evaluation and self-esteem of one's physical appearance (57). It is an important component of overall SE, and includes the attitudes, evaluation and feelings an individual holds about his or her own body (58). Mendelson et al (57) state that BE comprises three dimensions: feelings about one's general appearance (BE-appearance), feelings about one's weight (BE-weight) and evaluations attributed to others about one's body and appearance (BE-attribution). The BE of adolescents is influenced by the perceptions of family members, media and society. Studies conducted so far have specified the importance of BE, body image (BI), and body dissatisfaction among adolescents (59). Low BE is associated with lower overall SE (60, 61) but also with behavioural and psychological problems, and other mental health issues (62, 63). Some previous studies have indicated that BI dissatisfaction is related with some aspects

of risky sexual behaviour. Gillen et al. (64) reported that woman with positive evaluation of their body and appearance reported lower levels of risky sexual behaviour. According to Yamamiya et al. (65), women with high levels of dissatisfaction tend to be more equivocal in their sexual decision-making. This suggests that woman who appreciate their appearance might feel more confident to communicate in a sexual situation. Furthermore, women who are not satisfied with their body may be more likely to engage in risky sexual behaviour due to their lack of confidence. Contrary to this, Merianos et al. (66) found no significant differences between college students with high BI satisfaction and low BI satisfaction regarding risky sexual behaviour.

There has only been a small amount of research examining the relationship between sexting (as risky on-line behaviour), self-esteem, body-esteem, body-image and body-satisfaction. Kumari and Srivastavove (50), conducted a study to research the effects of sexting on SE and BI among teenagers. The results indicated that males, who are involved in sexting, have higher SE than females. However, they did not find any significant difference between the BI of males and females. Bianchi et al. (67) found that BE-attribution and objectified-body consciousness predicted sexting for sexual purposes. The authors concluded that this use of sexting during adolescence implies the belief that, in order to engage in sexual intercourse, it is important to be well evaluated by a potential partner, on whom the adolescent's SE is dependent. Howard et al. (68) explored whether BI self-consciousness during sexual relations predicts whether and for what reasons individuals send sexts. According to the research results, BI self-consciousness was not predictive of sending sexts in general or sending sexts in order to "feel sexy". The authors concluded that individuals affected by BI anxieties might be prone to technology-mediated abuse.

The research that has been undertaken in this field mainly confirms the significant contribution of SE and BI in the prediction of sexting, but does not give consistent results about the direction of the correlation. The fairly inconsistent findings indicate that their contribution to predicting sexting

is not redundant, and that they should be included together in researching the determinants of sexting.

Therefore, the aim of this research was to explore the phenomenon of sexting (including the characteristics of sexters) and to establish the predictive value of sex, relationship status, SE and BE for various forms of sexting (sending, receiving and forwarding).

Subjects and Methods

Subjects

The study sample consisted of 707 young men and girls from Bosnia and Herzegovina (N=395) and the Republic of Croatia (N=294). In 18 subjects, some inconsistency was noticed in their answers (they did not give answers to all items in the questionnaire), so their results were excluded from further analysis. In the total sample, there were 138 (20%) young men and 551 (80%) girls, aged between 18 and 39 (M=21.66, SD=2.34). Regarding their relationship status, 370 (53.7%) subjects stated that they were not currently in a relationship, and 319 (46.3%) stated that they were or had been in a relationship.

Measuring Instruments

Demographic characteristics. In this research, the subjects gave responses to questions relating to their demographic characteristics. They included: gender, age and current love relationship status (I am currently not in a relationship, I have been in a relationship for less than 6 months, I have been in a relationship for more than 6 months, etc.).

Sexting behaviour. A modified version of the Sexting Behaviours Scale (SBS) was used for assessment of engagement in the exchange of sexually explicit content using electronic media (69). The original scale consists of 11 items to examine receiving, sending and publishing sexually suggestive or provocative messages or photographs. In the modified version of the scale used in this research, items for assessment of sexually suggestive messages as a form of sexting were excluded from the scale. In

order to improve the validity of the content of the scale, the terms “semi-nude or nude” photographs/video recordings were used as follows: semi-nude photographs/video recordings are photographs/video recordings in which the person is in their underwear; nude photographs/video recordings are photographs/video recordings in which the person is without one part of their underwear or is completely nude. An additional 4 items were added in the modified version of the scale to assess forwarding and receiving forwarded sexually explicit content. It included items for assessing the exchange of sexually explicit video content, and items related to the number of people with whom the subjects exchanged semi-nude or nude photographs or video recordings. One item related to the identity of the persons with whom the subjects exchanged sexually suggestive or provocative contents. Subjects were able to choose more than one response (1 - I do not exchange semi-nude or nude photographs and/or video recordings with anyone, 2 - with friends and acquaintances, 3 - with a person I like, 4 - with a person I am dating, 5 - with the person with whom I am in an intimate relationship (e.g. boyfriend or girlfriend). The last item was used to assess which applications they used most often to exchange sexually suggestive or provocative contents (1 - Viber, 2 - WhatsApp, 3 - Instagram, 4 - Snapchat, 5 - Facebook, 6 - Twitter, 7 - E-mail, 8 - none, 9 - some other (please state)), where the subjects could also choose more than one response. The original version of the scale did not take into account popular social and communications networks, which young people use today (Twitter, WhatsApp), and therefore for this research it was modified to include these items. Subjects responded using a Likert scale with five levels, with 1 indicating “never” and 5 “often or every day”, assessing their personal engagement in sexting. The modified version of the scale consists of 16 items. The authors reported good internal consistency for the original scale expressed by the Cronbach alpha coefficient of reliability (Cronbach $\alpha=0.88$) (69). In this research the reliability of the modified sexting scale was $\alpha=0.81$.

Self-Esteem. The State Self-Esteem Scale (SSES) is a scale based on two other scales, Rosenberg’s

Self-Esteem Scale (RSE) (70) and the Janis-Field Feelings of Inadequacy Scale (JFS) (71). These two scales were combined in order to obtain the most precise multi-dimensional measuring instrument possible of current self-esteem. The SSES consists of 20 items, divided into three sub-scales: academic performance, social evaluation and appearance. The academic performance sub-scale consists of seven items which assess how far the individual deems that his or her performance is good. The social evaluation sub-scale consists of seven items which assess how far the individual feels self-consciousness or shame in relation to what others think of him/her. The appearance sub-scale consists of six items which assess how far the person is satisfied with their appearance. The subjects provide self-assessment on a Likert type scale from 1 to 5, where 1 indicates “not at all”, and 5 “extremely”. There are items which have reversed scoring, where 1=5, 2=4, 3=3 etc. Factor analysis, using the principal axis factoring method of the SSES, indicated the high expression of one factor. In this research, it was therefore decided to use a single factor scale structure. The authors reported good internal consistency expressed by the Cronbach alpha coefficient of reliability (Cronbach $\alpha=0.92$) (72). The internal reliability of the scale in this research was $\alpha=0.92$.

Body-Esteem. The Body Esteem Scale for Adolescents and Adults (BESAA) (57) is intended to examine satisfaction and attitudes towards one’s body and appearance. It may be used with adolescents and adults. The questionnaire contains 23 items divided into three sub-scales: BE-Appearance, BE-Weight and BE-Attribution to one’s body and appearance. The BE-Appearance sub-scale contains 10 items which assess one’s general opinion and feelings about one’s own appearance. The BE-Weight sub-scale consists of 8 items, which assess the degree to which the person is satisfied with their own weight. The BE-Attribution sub-scale consists of 5 items which assess the degree of conviction of the person that other people assess their body and appearance positively. Subjects give a self-assessment on a Likert type scale from 1 to 5, where 1 indicates “never” and 5 indicates “always”. Factor

analysis with the principal axis factoring method of BESAA yielded two factor structures. The BE-Appearance and BE-Weight factor comprise 18 items, whilst the BE-Attribution factor remained the same as in the original scale, represented by 5 items. Mendelson, Mendelson and White (57) found high coefficients of internal consistency for all three factors. For the sub-scale BE-Appearance, the Cronbach alpha coefficient of internal consistency was 0.92, for the sub-scale BE-Weight it was 0.94, and for BE-Attribution 0.81. In this research, the reliability of the sub-scale BE-Appearance and BE-Weight factor was 0.94, whilst of the BE-attribution sub-scale it was 0.67.

The Procedure and Ethical Aspects of the Research

The research was conducted on-line, through the web tool Google Forms. Distribution of the questionnaires was organized in two ways: by publishing on social networks or sending it to the institutional e-mail addresses of the participants. Before they completed the questionnaire, the purpose of the research was explained to the subjects and the anonymity of the data was stressed. It was also pointed out that the research was voluntary, and they could stop taking the questionnaire at any point. The subjects filled out the questionnaire in a previously determined order: first they had to fill in the socio-demographic data questionnaire, then the questionnaire for evaluation of sexting, self-esteem and body esteem. About 10 minutes were needed to complete the questionnaires.

Statistical Analysis

Before the statistical analysis of the results itself, the Shapiro-Wilk test was used to test the normality of distribution of the tested variables. The distribution of the results on the sexting sub-scales was positively asymmetrical, whilst on the sub-scales of self-esteem, general body perception and body esteem attribution, it was negatively asymmetrical. Non-parametric statistical methods were used to analyse the data. For testing the differences in fre-

quency in sexting in relation to the gender of the subject, the Chi-square test was used. To test the differences between sexters and non-sexters in self-esteem, BE-Appearance and BE-Weight and BE-Attribution, the Mann-Whitney U test was used. To verify the predictive value of gender, relationship status, SE, BE-Appearance and BE-Weight and BE-Attribution, binary logistic regression was used. Data processing was conducted using the statistics program SPSS Statistics 20. For assessment of the significance of the results obtained, the levels of significance of 0.05 and 0.01 were used.

Results

The largest number of subjects sent and received semi-nude or nude photographs and video recordings from a person with whom they were in an intimate relationship (Table 1), where the frequency of receiving was slightly higher than sending semi-nude or nude photographs and video recordings. The total percentage of participants who did not receive sexts was 58.7% (415), and those who did not send sexts, 47.1% (333). Items related to the publication and receiving or forwarding of sexually explicit content were not analysed in this study due to insufficient data.

The highest number of subjects reported exchanging (sending, receiving and/or forwarding) sexually explicit content with one person (N=135 subjects) or with 2 to 5 persons (N=151 subjects). A total of 11 subjects had exchanged sexually explicit content with six to nine people, and as many as 15 subjects with 10 to 20 people. For exchanging

Table 1. The Identity of Persons to Whom the Subjects Sent or from Whom They Received Semi-nude or Nude Photographs/video Recordings

| Identity of the person | Sending sexts (N; %) | Receiving sexts (N; %) |
|------------------------|----------------------|------------------------|
| Nobody | 333 (47.1) | 415 (58.7) |
| Friends/ acquaintances | 166 (23.4) | 75 (10.6) |
| Person I like | 41 (5.8) | 24 (3.4) |
| Person I date | 60 (8.5) | 35 (4.9) |
| Intimate partner | 225 (31.8) | 223 (31.5) |

Table 2. The Percentage of Subjects' Participating in Sexting

| Sexting actions/Media Types | Participation in Sexting (N; %) | | | | |
|-----------------------------|---------------------------------|-----------------------------------|-----------------------------------|---------------------------|------------------------|
| | Never | Rarely or only a few times a year | Occasionally or 2-3 times a month | Often or 2-3 times a week | Regularly or every day |
| Receiving | | | | | |
| Photographs | 329 (47.8) | 280 (40.6) | 64 (9.3) | 12 (1.7) | 4 (0.6) |
| Video recordings | 561 (81.4) | 103 (14.9) | 20 (2.9) | 2 (0.3) | 3 (0.4) |
| Sending | | | | | |
| Photographs | 448 (65) | 189 (27.4) | 37 (5.4) | 15 (2.2) | 0 (0) |
| Video recordings | 620 (90) | 57 (8.3) | 11 (1.6) | 1 (0.1) | 0 (0) |
| Forwarding | | | | | |
| Photographs | 473 (68.7) | 190 (27.6) | 23 (3.3) | 3 (0.4) | 0 (0) |
| Video recordings | 591 (85.8) | 85 (12.3) | 11 (1.6) | 2 (0.3) | 0 (0) |

(sending, receiving and/or forwarding) semi-nude or nude photographs or video recordings, subjects most often used the applications WhatsApp (266 subjects), Facebook (77 subjects), Instagram (61 subjects), Viber (35 subjects), Snapchat (37 subjects), whilst email and Skype/Couple/Grindr were used least (3 subjects).

These results showed that in the tested sample between 14.2% and 52.2% participated in sexting. Receiving semi-nude or nude photographs proved to be the most frequent form of sexting, followed by sending and forwarding semi-nude or nude photographs. Exchanging sexually explicit content using video recordings was the least frequent form. The results obtained are presented in Table 2.

In terms of the level of participation in sexting, the subjects were divided into three groups. The first group comprised subjects who had not engaged in sexting behaviour, and they are defined as non-sexters. The second group comprised subjects who engage in sexting behaviour rarely or only a few times a year, and they are defined as the occasional sexters. The third group, the frequent sexters, are those subjects who engage in sexting behaviour on a monthly, weekly or daily basis. Due to the insufficient number of subjects relating to individual forms of sexting when testing the desired differences, the groups of occasional sexters and frequent sexters were re-named "sexters".

A statistically significant difference was found between girls and young men in frequencies in all forms of sexting behaviour, apart from sending semi-nude and nude photographs and video recordings. All forms were significant at a statistical level of $P < 0.01$ (Tables 3 and 4). Girls were more represented in the category of sexters than the young men. In the group of occasional sexters, young men were represented in all forms of sexting behaviour, apart from receiving semi-nude and nude photographs. When the group of frequent

Table 3. Differences in the Frequency of Sexting by Sharing Photographs, in Relation to the Subjects' Gender

| Sexting actions/Sex | Frequency of sexting (N; %) | | |
|---------------------|-----------------------------|------------|-----------|
| | Non | Occasional | Frequent |
| Receiving | | | |
| Male | 56 (40.6) | 56 (40.6) | 26 (18.8) |
| Female | 273 (49.5) | 224 (40.7) | 54 (9.8) |
| χ^2 | 9.626* | | |
| Sending | | | |
| Male | 89 (64.5) | 38 (27.5) | 11 (8) |
| Female | 359 (65.2) | 151 (27.4) | 41 (7.4) |
| χ^2 | 0.049 | | |
| Forwarding | | | |
| Male | 78 (56.5) | 48 (34.8) | 12 (8.7) |
| Female | 395 (71.1) | 142 (25.8) | 14 (2.5) |
| χ^2 | 18.026* | | |

* $P < 0.01$.

Table 4. Differences in the Frequency of Sexting by Sharing Video Recordings, in Relation to the Subjects' Gender

| Sexting actions /Sex | Frequency of sexting (N; %) | | |
|----------------------|-----------------------------|------------|----------|
| | Non | Occasional | Frequent |
| Receiving | | | |
| Male | 99 (71.7) | 27 (19.6) | 12 (8.7) |
| Female | 462 (83.8) | 76 (13.8) | 13 (2.4) |
| χ^2 | 16.658* | | |
| Sending | | | |
| Male | 123 (89.1) | 12 (8.7) | 3 (2.2) |
| Female | 497 (90.2) | 45 (8.2) | 9 (1.6) |
| χ^2 | 0.236 | | |
| Forwarding | | | |
| Male | 99 (71.7) | 32 (23.2) | 7 (5.1) |
| Female | 492 (89.3) | 53 (9.6) | 6 (1.1) |
| χ^2 | 29.718* | | |

*P<0.01.

sexters is considered, it may be concluded that young men engage more often in sexting behaviour in forwarding and receiving sexually explicit content (photographs and video recordings) in comparison to girls.

The differences in self-esteem in relation to the category of sexting (non-sexters and sexters) were tested using the Mann-Whitney U Test. A statistically significant difference was found in the level of self-esteem between non-sexters and sexters in the categories of receiving, sending and forwarding semi-nude or nude photographs (Table 5). In all these categories, non-sexters had a higher level of self-esteem than sexters.

The differences in BE-Appearance and BE-Weight and BE-Attribution in relation to the category of sexting (non-sexters and sexters) were tested using the Mann-Whitney U Test (Table 6). No statistically significant differences were established in the BE-Appearance and BE-Weight between sexters and non-sexters, whilst on the scale of BE-Attribution, significant differences were found in all forms of sexting, apart from sending and forwarding sexually explicit content by video recording. Sexters who receive, send, and forward semi-nude or nude photographs, and those who receive sexually

Table 5. Differences in Self-Esteem between Non-sexters and Sexters

| Sexting actions/Media Types | Self-esteem | | Z |
|-----------------------------|----------------------|----------------------|---------|
| | Non-sexters | Sexters | |
| Receiving | | | |
| Photographs | Mdn ± IQR 362.7±81.0 | Mdn ± IQR 328.8±78.0 | -2.237* |
| Video recordings | 350.7±80.0 | 319.9±78.0 | -1.582 |
| Sending | | | |
| Photographs | 357.0±80.0 | 322.7±78.0 | -2.154* |
| Video recordings | 348.6±80.0 | 312.8±78.0 | -1.415 |
| Forwarding | | | |
| Photographs | 357.7±81.0 | 317.1±77.0 | -2.486* |
| Video recordings | 347.7±80.0 | 328.5±78.0 | -0.886 |

*P<0.05.

explicit video recordings have higher values on the scale of BE-Attribution than non-sexters.

In order to establish the predictive contribution of gender, relationship status, self-esteem, BE-Appearance and BE-Weight and BE-Attribution, to engaging in sexting behaviour, binary logistic regression was performed. The criteria variables were receiving, sending and forwarding semi-nude or nude photographs, and video recordings. They were divided binarily, where 0 represents non-sexters and 1 sexters. In relation to the variables of self-esteem, BE-Appearance and BE-Weight and BE-Attribution, they were divided into three categories: persons who achieve low, moderate or high results. The group which achieved moderate results was obtained whereby the appropriate arithmetic mean was expanded to the interval ± 1 SD. All results lower than this interval comprised the group of lower results, whilst all results higher than this interval comprised the group of higher results. The variable "relationship status" was divided into two groups: persons in an intimate relationship, and persons not in an intimate relationship.

Gender, as a predictor, proved to be a statistically significant predictor of receiving semi-nude or nude photographs and video recordings, and forwarding semi-nude or nude photographs and video recordings. Young men take part more often in these activities. The variable "relationship status"

Table 6. Differences in BE-Appearance and BE-Weight and BE-Attribution between Non-sexters and Sexters

| Sexting actions/Media Types | BE-Appearance and BE-Weight (Mdn ± IQR) | | | BE-Attribution (Mdn ± IQR) | | |
|-----------------------------|---|------------|--------|----------------------------|------------|----------|
| | Non-sexters | Sexters | Z | Non-sexters | Sexters | Z |
| Receiving | | | | | | |
| Photographs | 355.8±68.0 | 335.1±67.0 | -1.363 | 315.9±15.0 | 371.6±17.0 | -3.678** |
| Video recordings | 350.9±68.0 | 319.1±67.0 | -1.631 | 337.0±16.0 | 379.9±17.0 | -2.210* |
| Sending | | | | | | |
| Photographs | 351.6±68.0 | 332.7±67.0 | -1.187 | 323.7±15.0 | 384.6±17.0 | -3.841** |
| Video recordings | 349.3±68.0 | 306.8±66.0 | -1.682 | 340.9±16.0 | 381.6±17.0 | -1.616 |
| Forwarding | | | | | | |
| Photographs | 348.2±68.0 | 338.2±67.5 | -0.616 | 334.4±16.0 | 368.2±16.0 | -2.078* |
| Video recordings | 345.6±68.0 | 341.7±67.0 | -0.179 | 339.0±16.0 | 381.0±16.0 | -1.940 |

*P<0.05; **P<0.01.

Table 7. Predictive Values of Gender, Relationship Status, Self-Esteem, BE-Appearance and BE-Weight and BE-Attribution on Engagement in Sexting

| Predictive variables | Receiving | | | Sending | | | Forwarding | | | |
|-----------------------------|-----------|-------|---------|---------|-------|---------|------------|-------|---------|------|
| | B | P | Exp (B) | B | P | Exp (B) | B | P | Exp (B) | |
| Gender | P | -0.53 | 0.009** | 0.59 | -0.26 | 0.213 | 0.77 | -0.77 | 0.000** | 0.46 |
| | V | -0.83 | 0.000** | 0.44 | -0.33 | 0.302 | 0.72 | -1.32 | 0.000** | 0.27 |
| Relationship status | P | 0.40 | 0.013* | 1.49 | 1.01 | 0.000** | 2.74 | 0.12 | 0.486 | 1.13 |
| | V | -0.03 | 0.890 | 0.97 | 0.90 | 0.001** | 2.45 | 0.30 | 0.196 | 1.35 |
| Self-Esteem | P | -0.24 | 0.127 | 0.79 | -0.42 | 0.013* | 0.66 | -0.33 | 0.053 | 0.72 |
| | V | -0.29 | 0.158 | 0.75 | -0.33 | 0.211 | 0.72 | -0.36 | 0.120 | 0.70 |
| BE-Appearance and BE-Weight | P | -0.42 | 0.061 | 0.66 | -0.08 | 0.730 | 0.92 | -0.13 | 0.590 | 0.88 |
| | V | -0.31 | 0.271 | 0.74 | -0.27 | 0.447 | 0.76 | 0.18 | 0.577 | 1.20 |
| BE-Attribution | P | 0.55 | 0.000** | 1.73 | 0.50 | 0.002** | 1.65 | 0.49 | 0.002** | 1.63 |
| | V | 0.75 | 0.000** | 2.11 | 0.52 | 0.038* | 1.68 | 0.66 | 0.002** | 1.94 |
| R2 | P | 0.055 | | | 0.101 | | | 0.049 | | |
| | V | 0.063 | | | 0.055 | | | 0.095 | | |

P=photographs; V=video recordings; *P<0.05; **P<0.01

proved to be a statistically significant predictor for the categories of receiving semi-nude or nude photographs, and sending semi-nude or nude photographs and video recordings. Persons in a relationship engage in these behaviours more often. Self-esteem was shown to be a statistically significant predictor in the categories of sending semi-nude or nude photographs. Persons with lower self-esteem engage in this form of behaviour more often. The variable BE-Attribution was shown to be a statistically significant predictor of all forms of sexting

behaviour. Persons with higher results on the BE-Attribution scale engage in these behaviours more often. The values obtained are presented in Table 7.

Discussion

It is clear from the results that the subjects participate in exchanges of explicit content, especially receiving semi-nude or nude photographs. The results obtained partially agree with the results of research conducted previously (12, 19, 28, 41, 73) according

to which, between 30% and 89% of young people participate in sexting behaviour. In our research, the subjects exchanged fewer semi-nude and nude video recordings than photographs, which is in line with some other research conducted to date (74). In a great deal of research, the authors, when establishing the prevalence of sexting, do not distinguish between photographs and video recordings (11, 41), and so in that research it is not possible to see any difference in the prevalence of sending photographs and video recordings. The reason for the lower prevalence of sexting behaviour relating to receiving, sending and forwarding video recordings in comparison to photographs may be found in the stricter definition. The form of sexting which includes the exchange of semi-nude or nude video recordings is quite explicit. Subjects reported that they more often received semi-nude or nude photographs and/or video recording than they sent them. The potential reason for this could be that due to the need to give a socially acceptable reply, a person will much more readily admit to receiving a specific form of sexting than to sending it. Similarly, young people, in their exchanges of sexually explicit content, most often use the application WhatsApp, which of all those mentioned has the best security system for data protection and prevention of hacking, which could be a potential reason why young people use that application most. Some researchers mention that young people believe communication using WhatsApp to be a more intimate form of communication, and they use it more often for the same reason (75).

The greater involvement by young men in sexting behaviour supports some other research already conducted (16, 28-30). In the case of this research, this was especially the case in relation to the category of frequent sexters. These results may be partially explained by the influence of the social norms in the context in which the research was conducted. These norms emphasize that it is much more problematic when girls engage in certain forms of sexually explicit behaviour than young men. It is possible that young men even receive support from their peers when they engage in sexting behaviour. Further, Kumari and Srivastava (50) point out that

girls are at much greater risk of being exposed to sexual attack or abuse if it is revealed that they have voluntarily sent semi-nude or nude photographs, especially if their photographs are shared without their consent. In this regard, we may presume that admitting to participating in sexting by girls may be deemed as a socially undesirable response, but confirmation by young men may even be seen as socially desirable.

The results of this research are in line with previous research (41, 28) in which it was found that persons in a relationship send semi-nude or nude photographs and/or video recordings more frequently. The authors explain these results in the context of the new internet culture and propose that sexting behaviour should be seen as normal, if it occurs between partners in an emotional relationship. Scholes-Balog et al. (41) state that sending sexting objects in a relationship may serve to maintain the quality of the relationship, increase passion in the relationship, and act as a type of foreplay. In our research, the relationship status was shown to be a predictor of receiving semi-nude or nude photographs as well, which may again be an everyday expression of sexuality between young people. The descriptive finding of the increasing frequency of exchanges of sexually explicit content with intimate partners supports this statement. These results are in line with earlier research, which indicate that people most frequently engage in sexting with their romantic partners (18, 24, 75, 76). However, there are also indications that there are people who exchange sexts with others, including large numbers of other people, such as exchanges with 10 or more different people, which may indicate that this behaviour by some individuals is a form of "entertainment" (13, 77, 78) or an alternative to explicit physical sexual activity (79).

The results of testing the differences in self-esteem between non-sexters and sexters suggest that those who receive, send and/or forward semi-nude or nude photographs have lower self-esteem than those who do not do this. This is also partially supported by the results of binary logistic regression, which showed that self-esteem is a significant predictor of sending semi-nude or nude photo-

graphs. Scholes-Balog et al. (41), in their research on a sample of Australian adolescents, concluded that lower self-esteem is only a significant predictor of sending nude photographs/video recordings, which they perceive as the most risky form of sexting, whilst self-esteem did not have a significant contribution to other forms of sexting. One of the possible explanations of sending and forwarding sexually explicit content by persons with a lower self-esteem could be that these people, who usually have a negative self-image and underestimate their own abilities (80), tend to question themselves and try to increase their own value by seeking evaluation and approval from other people.

According to the results of our research, there is no difference in body-esteem in relation to sending, receiving and forwarding sexually explicit semi-nude or nude photographs and video recordings, nor is body-esteem a significant predictor of these forms of sexting. The presumption that people with lower self-esteem have a lower body-esteem (81, 82), whereby they may be at higher risk of engaging in sexting, was not confirmed in this research. Contrary to the results of our research, Kumari and Srivastavove (50) found that males, who are involved in sexting, have higher self-esteem than females. However, they did not find a significant difference in the body image of males and females. Furthermore, Bianchi et al. (67) found that body-esteem attribution and objectified-body consciousness predicted sexting for sexual purposes. We can try to explain the different results in our research by the measuring instrument we used for body-esteem assessment. Cragun et al. (83) pointed out some concerns about BESAA. According to them, certain scale items may lack structural invariance across gender and developmental age group. Furthermore, multiple items demonstrated a tendency to load on different factors. Several item pairs are similar in wording and/or meaning and showed a tendency for correlated errors. In addition, an additional BE dimension assessing views about one's muscle build and strength may be needed to fully capture body esteem among adolescent males. The authors suggest that is necessary to conduct additional psychometric studies to modify the BESAA.

Finally, according to Mendelson et al. (57) BE-Appearance is the only subscale that consistently predicts self-esteem.

Further analysis, in our research, confirmed that those who are sure that the people around them evaluate their appearance positively are the ones who engage in sexting behaviour most. Therefore, their own potential satisfaction with their weight or appearance is not so important. The question arises as to what it is that indicates to a person that other people evaluate their appearance positively. How is it possible that those indicators do not also affect the body-esteem of that person, so that it is not shown to be a significant predictor? The modern internet culture has increased the influence of social networks on young people. Social networks offer the constant possibility of evaluation by others, through the "Like" button and positive comments. It may be presumed that people who are given positive comments and evaluations by others on social networks have better BE attribution. This certainly affects their overall perception, however, not to the same extent as it does BE attribution itself. The research by Bianchi et al. (67) established that BE attributions are linked with motivation for sexting, which include sexual reasons and motives for improving one's body image. Possible explanations for these results related to BE attribution may be that people engage in sexting behaviours in order to receive positive evaluation of their physical appearance from others. These positive evaluations encourage them to continuing using sexting. Beside that, it is possible that they use sexting for other motives, such as sexual purposes for example (e.g. flirting, entering into sexual relationships etc.).

The results of this study have significant implications for future research and practice. In consideration of the potentially negative and harmful consequences of sexting behaviour, prevention programmes should be directed toward young people, because they participate in sexting behaviour most, and at the same time it is important for them for other people to assess their body and appearance positively. These educational programs should focus on improving knowledge of the idealized body image presented in the media. Specific education

programmes aimed at deconstructing gender stereotypes and media ideals could be useful in the prevention of sexting for body-image reinforcement (67). Young people could also benefit from intervention programmes based on a careful weighing of the reasons for or against sexting, and considering the possible future consequences. The clinical implications of our research could be emphasizing the importance of concerns regarding body image in young people as a possible index of the normative use of sexting, with requests for clinical attention only in the presence of severe impairment of body image (67).

In future research, it would be useful to examine the role of different sexual motives in explaining the relationship between sexting, self-esteem and body-esteem. The results should certainly be verified by future research using samples with different sexual orientation. Whatever the case, these results should be repeated in future research, using multiple operationalization of all the constructs. In conclusion, the results of this research show that young people participate in sexting most often in the form of receiving semi-nude or nude photographs. Young men receive and forward semi-nude/nude photographs and/or video recordings more often than girls. Young men and girls with lower self-esteem will engage in sexting, especially sending semi-nude or nude photographs, more readily than those with high self-esteem.

Nevertheless, the limitations of this study are related to the sensitive topics of the research, such as sexting behaviour, self-esteem, and body-esteem. During the research into these constructs, it is potentially possible to give socially desirable responses or avoid completely honest responses. The use of a scale of lying and socially desirable responses would additionally increase the internal validity of the results obtained. In addition, the sample in this research does not represent the general population, which reduces its external validity, that is, the possibility of generalization. All the data were collected by self-report methods, whose weakness may be the impossibility of completely objective observation of one's own behaviour. Moreover, another potential limitation of the research is the fact that it was

conducted on-line, which reduces the possibility of control of the subjects, but also the representative nature of the subjects, in view of the fact that it is possible that the only people who participated in the research are subjects who are interested in the subject-matter.

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