



Original article

CYBERBULLYING AND MENTAL HEALTH AMONG ADOLESCENTS: THE ROLE OF ATTITUDES

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ABSTRACT:

Purpose: Apart from being an institution, the school is also a human community that functions to a large extent in virtual social networks. Some destructive interactions within the latter have the potential to significantly reduce the school's contribution to student development. The present research aims to examine the extent of cyberbullying among students and the role of attitudes towards cyberbullying in the process of taking cyber-aggressive actions.

Material/Methods: Bulgarian versions of two questionnaires were used - on cyberbullying and on attitudes towards cyberbullying in a study of 658 students aged between 14 and 18 ($M=15.68$, $SD=1.21$).

Results: A high degree of cyberbullying was found, and a "spiral of aggression" mechanism has been described, in which the components mutually support and reinforce each other. As a prerequisite for cyberbullying, three main attitudes have been identified - publicity, absence of direct contact and immediate reinforcement of the cyberaggressor's actions, the latter having the greatest contribution to the transition to aggressive online actions.

Conclusions: We analyse the relationship between attitude towards cyberbullying and the cyberbullying consequences for mental health in the generative artificial intelligence era. On the basis of the obtained results, actions towards cyberbullying prevention are indicated, focusing on the attitudes.

Keywords: psychology Q000523, mental health, adolescent, cyberbullying, attitudes,

INTRODUCTION

The lives of today's generation of children and adolescents largely take place in online interactive media that influence the way social relationships are formed. The dark side of young people's internet usage is that they may bully or suffer from others' bullying in cyberspace. Cyberbullying consists of intentional and repeated harm that occurs in cyberspace using computers, smartphones and other devices.

Cyberbullying is relatively easy to perform compared to face-to-face harassment, and this makes it especially attractive to aggressors. It provides some advantages over the traditional form of bullying. It is less engaging, for example, to use hate words when they are written on the keyboard instead of saying them in the person's face. It is often much easier to use a computer or phone in a hurtful way – the abuser acts from a distance and does not need to see the immediate response from the victim when harassing, which allows for online disinhibition [1]. Suler describes this process as "loosening of the repressive barriers against underlying fantasies, needs and affect" (p.184). Teenagers often simply cannot understand the serious harm they are causing because they are protected by the victim's response. In addition, the painful or hurtful actions of the cyber-aggressor spread very quickly, and a virtually unlimited number of people can participate in the attack with no further effort from the perpetrator.

Adolescence is a transitional period with considerable growth and challenge. With limited contextual cues and relative anonymity of the online environment, adolescents tend to engage in more high risk behaviors, resulting in a higher chance of interpersonal conflict. Young people during this period are particularly vulnerable and cannot fully understand the connection between behaviors and consequences [2]. Impulsiveness, sensation seeking, thrill seeking cause adolescents to take more risks and prefer immediate gratification, which prevents them from understanding the longterm consequences of their actions. [3]

Prevalence of cyberaggression

A recent review reported that the global prevalence of childhood and adolescent cyber victimization ranges from 14% to 57.5%, while perpetration range is 6% to 46.3%, with teasing and insulting as most common [4]. In

an umbrella metaanalysis (metanalysis of metaanalytic studies) [5], it was shown that, globally, around four in ten adults who use the internet have experienced cyberbullying. In the United States, nearly half of adolescents have experienced at least one instance of cyberbullying. Within Asia, countries such as Singapore, China, Malaysia and South Korea all report high prevalence rates close to 50%.

Some risk and protective factors were investigated [4]. The risk factors were grouped in personal and situational. Age, gender, race, health conditions, impulsiveness, online behavior, and past experiences of victimization are the personal factors involved. The situational factors consisted of parent-child relationship, interpersonal relationships, and geographical location. The protective factors against cyberbullying discovered were empathy and emotional intelligence, parent-child relationship, and school climate. According to [5], cyberbullying victimization was confirmed as consistently associated with unregulated school environments and unsupportive parental relationships.

Cyberbullying and mental health

Although cyberbullying is still a relatively new field of research, cyberbullying among adolescents is considered to be a serious public health issue that is closely related to adolescents' behavior, mental health and development. It exerts negative effects on many aspects of young people's lives, including personal privacy invasion and psychological disorders. In comparison with traditional victims, those bullied online show greater levels of depression, anxiety and loneliness. Cyberbullying may have particularly negative impacts on the well-being of adolescents. A number of cross-sectional and longitudinal studies have reported increased levels of anxiety and depression among cyberbullying victims. An example is a metaanalysis [6] that explored the relation between cyberbullying victimization and depression. Investigated were 57 empirical studies from 17 countries (74 effect sizes and 105 440 participants). The results showed that there was a significant positive relation between cyberbullying victimization and depression ($r = .291$, 95% $CI = [.246, .335]$). Moreover, reported effect sizes of cyberbullying on depression have increased over time. The effect of cyberbullying victimization on depression increases with age and has a more adverse effect on females than males.

In comparison with traditional victims, those bullied online show greater levels of depression, anxiety and loneliness [7]. Self-esteem problems and school absenteeism have also proven to be related to cyberbullying [8]. K.T.A.S. Kasturiratna and colleagues argue that the relationship between psychological problems and cyberbullying victimization is bidirectional, as individuals with pre-existing conditions are more vulnerable to cyberbullying, which in turn exacerbates their symptoms. As a consequence, behavioural changes occur: cyberbullying victims show lower school attendance, academic achievement and worse peer relationships and tend to engage more in both traditional and cyberbullying perpetration. [5]

Relationships in cyber-violence are most often viewed in two opposing groups – bullies and victims. However, there is also some overlap between groups, as some people are both victims and perpetrators. When analyzing the results of cyberbullying, it is important to take into account the distinction between people who are only victims and those who are both victims of cyberbullying and cyberbullying others (cyberbully-victims). Research reveals a number of physical health effects of cyberbullying. S.A. Fahy and colleagues [9] found that cyberbullied children were more likely than their non-bullied peers to develop stomach aches, sleep problems, headaches, tension, fatigue, and poor appetite, especially immediately after they have been molested. A study from Singapore [10] confirmed these results for cyberbullying. It also reported that cybervictims had more internalizing problems, such as anxiety or depression, whereas both cyberbullies and cyberbully-victims reported more externalizing problems, such as aggressive behaviour. A recent metaanalysis of longitudinal studies confirmed these data for cyberbullying and found that some adolescents who were victims of cyberbullying in the first wave were themselves cyberbullying in subsequent waves. The cybervictim-bullies are more prone to suffer depression and anxiety. They also have serious emotional difficulties with peers. [11]

Suicide

H. Sampasa-Kanyinga, P. Roumeliotis, and H. Xu [12] examined the links between cyberbullying victimization and a broad range of suicidal behaviors: suicidal thoughts, plans and suicide attempts. The study was conducted among 2,999 students (1,658 girls and 1,341 boys) in middle and upper grades (7 to 12) in Canada. The results showed that victims of cyberbullying have a significantly higher risk of suicidal thoughts and attempts compared to those who have not encountered such threats. Results were similar when adjustments were made for sociodemographic characteristics, substance use, and inactive lifestyle. Mediator analyzes indicated that the relationship between cyberbullying victimization and each of the outcomes of suicidal thoughts, suicidal plans, and suicide attempts was mediated by depression, suggesting a need to address depression among cyberbullying victims to prevent the risk of subsequent suicidal behaviors. Through a metaanalysis of meta-analytic data, Kasturiratna and colleagues [5] confirm that suicidal ideation and suicidal intent are routinely found in cyberbullying research. Victimization appears to be a marker of greater psychopathological severity, particularly suicide-related issues [13].

Research aim

The present study aims to investigate the role of attitudes in the process of cyberbullying, setting three tasks: a) the spread of online aggression among respondents from an East European country – a region with relatively scarce data; b) the role of attitudes towards cyberbullying - whether positive attitudes towards cyberbullying lead to actions related to cyberbullying; c) which attitudes are more likely to lead to actual cyberbullying.

MATERIALS AND METHODS

Instruments: Two self-report scales were used in this study.

1. Bulgarian version of the Cyberbullying Questionnaire [14]. In the Bulgarian version, the first two items: (1) sending offensive or threatening messages by email and (2) sending offensive or threatening messages via mobile phone, are combined into one question by partially expanding the content: “To send threatening or insulting messages by email/chats/Facebook or by SMS”. For this reason, the total number of questions is 15 (not 16, as in the original version). In contrast to the original version, which also includes one factor, the exploratory and confirmatory analysis in the Bulgarian sample (on 1431 adolescents) gives grounds for the extraction of two factors [15], designated as:

(a) *Threats/insults:* this factor includes sending offensive or threatening messages, offensive jokes, gossip or comments, uploading derogatory photos, as well as actions such as hacking someone else’s mail. For example: “Send threatening or abusive messages via email/chats/Facebook or SMS.”; “Writing offensive jokes, gossip, or comments about a classmate on the internet.”

(b) *Video materials:* formed by 7 items, 6 of which are three pairs of questions suggesting the creation and uploading of compromising video materials to the network. For example: “Making videos of a group of classmates making fun of someone or making one do humiliating things.”; “Uploading such clips to the web or sending them to other people.”

In the Bulgarian version, instead of the 3-point frequency response scale from the original study: from 0 (never), 1 (sometimes) and 2 (often) [14], a 5-point scale was used: from 1 (never), 2 (rarely), 3 (sometimes), 4 (often) and 5 (very often), for the Bulgarian adaptation, see in detail [15].

2. Attitudes towards cyberbullying

To assess attitudes towards cyberbullying, questions about attitudes towards specific characteristics of this form of aggression are included. For some of them, the question-

naires developed by K. Bartlett and D. Gentile [16] were used as a baseline. When formulating the questions in the Bulgarian scale, they are chosen to be close to the vocabulary of the studied age group – adolescence. Answers are given using a 5-point Likert scale of agreement (from 1 – completely false to 5 – completely true).

The total item pool of 39 items was analyzed on 1164 adolescents in two stages in two independent samples. Based on the results obtained, the five subscales for assessing attitudes towards cyberbullying are constructed, each of which is formed by 4 items [15]:

Cyberaggressor’s anonymity, for example: “The cool thing about humiliating on the Internet is that others have no idea who they are dealing with.”; “On social networks, you can also behave very nasty because they won’t reveal you.”

Publicity of humiliation, for example: “Exposing someone on the Internet is smarter because the information reaches many more people.”; “If you want to make someone laughable, do it on the Internet, exposing them to everyone.”

Absence of direct contact with the victim, for example: “If someone annoys you at school, don’t deal with them, but then make them suffer on the Internet.” “It’s always better, instead of dealing directly with the person who offended you, to write something nasty about them on the network.”

Erasing differences in power (power, influence, status), for example: “On the Internet, anyone can have fun with whoever they want, even if the other person is bigger or stronger.”; “The only way for people who aren’t that strong to get back at their bully is to attack them online.”

Immediate reinforcement of the cyberbully’s actions - the positive consequences for the perpetrator of the cyberbullying, supporting the actions, for example: “Making fun of someone on the Internet lifts my spirits.”; “It’s fun to harass someone who deserves it online.”

Cronbach’s α internal consistency values for all scales reported in the present article are given in Table 1.

Table 1. Psychometric characteristics of the instruments used, N=594

Indicators	Number of items	Internal consistency – Cronbach’s α
Attitudes towards cyberbullying		
Publicity of humiliation	4	0,80
Absence of direct contact with the victim	4	0,74
Cyberaggressor’s anonymity	4	0,75
Erasing differences in power	4	0,57
Immediate reinforcement of the cyberbully’s actions	4	0,76
Cyberbullying		
Cyberbullying (aggregated scale)	15	0,91
Posting threats/insults online	8	0,83
Posting degrading video material online	7	0,88

Procedure of data collection and participants

The sample included 658 pupils, of which 594 have complete data – 268 boys (45.1%) and 326 girls (54.9%), aged between 14 and 18 (M=15.68, SD=1.21). All the individuals studied are from schools in the capital.

A questionnaire containing the above mentioned scales was used for this study. Following the consent of the school authorities, the questionnaire was distributed to the participants through school teachers and was administered in the classroom. The pupils who filled out the questionnaire were informed that participation is voluntary and anonymous, and even if they agree to participate, they can stop at any time.

RESULTS:

Prevalence of cyberbullying

According to the data obtained, 78.1% of the respondents indicated at least one question from the cyberbullying questionnaire about participating in online aggression that they did it rarely (or more often). As for the types of cyberbullying, 75.3% admitted to participating in Threats/insults and 37.0% admitted to participating in posting Videos. Every three out of four pupils have participated in some form of cyberaggression. How can that be explained? To answer that question, we performed linear structural modelling.

Links among attitudes towards cyberbullying and cyberaggressive actions

In the first stage, the analysis was done by correlations between the two types of variables. The correlations of attitudes towards cyberbullying with the components of cyberbullying are presented in Table 2.

Table 2. Correlations of cyberbullying attitudes with cyberbullying forms: Single Pearson coefficients and partial correlation coefficients (N=594)

Cyberbullying Attitudes	Cyberbullying through Threats/insults	Cyberbullying through humiliating Videos
Erasing differences in power	0,335** <i>(0,188**)</i>	0,286** <i>(0,046)</i>
Absence of direct contact with the victim	0,407** <i>(0,224**)</i>	0,354** <i>(0,070)</i>
Immediate reinforcement of the cyberbully’s actions	0,487** <i>(0,311**)</i>	0,396** <i>(0,037)</i>
Publicity of humiliation	0,449** <i>(0,285**)</i>	0,363** <i>(0,030)</i>
Cyberaggressor’s anonymity	0,427** <i>(0,252**)</i>	0,360** <i>(0,053)</i>

Notes:

(a) Single Pearson correlations are presented, below them, in parentheses, in italics, are the partial correlation coefficients after accounting for the relationship between the two components of cyberbullying.

(b) ** p<0.01

All single correlations of cyberbullying attitudes with cyberbullying components were statistically significant and, with one exception, moderate in value. At the same time, there is a clear tendency for a stronger correlation of attitudes with Threats/insults, compared to the single correlations with the other component – Videos.

Since in the present study, the single correlation between Threats/insults and Video materials is r=0.77, the partial correlations were also calculated after accounting for the relationship between the two components of cyberbullying.

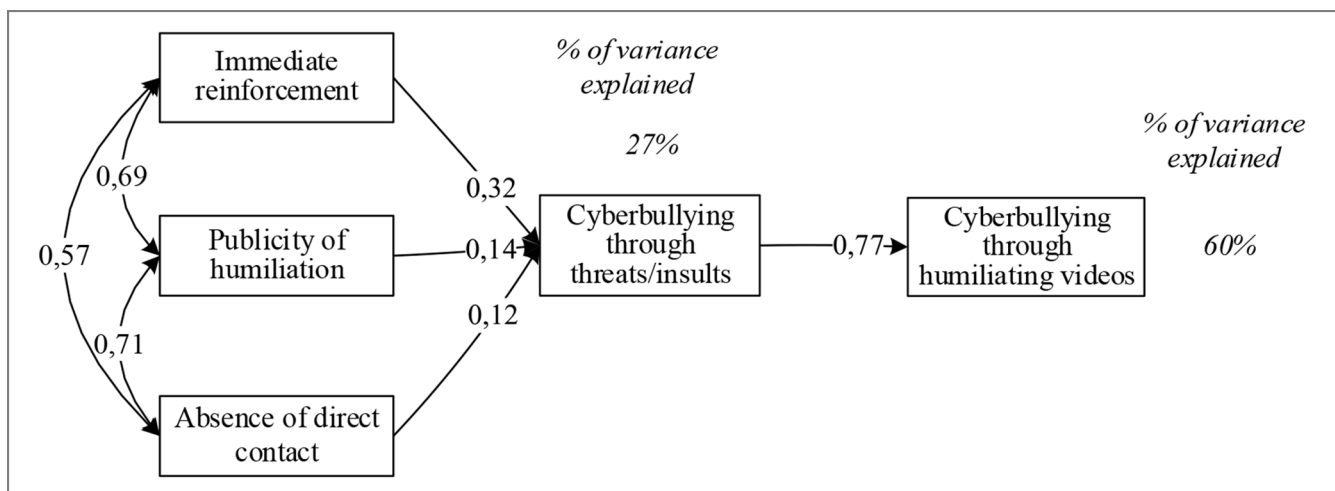
As the data in the table 2 show, after accounting for the relationships between the cyberbullying components, the correlations of attitudes with Threats/Insults decrease, but in comparison, all relationships of attitudes with the

other component Videos are found to be statistically insignificant. In other words, there were significant single correlations of attitudes with Videos due to the association of Videos with Threats/insults.

In accordance with the theoretical ideas about the content of the evaluated constructs, in the tested structural model, attitudes towards cyberbullying are defined as independent variables, Video materials - as a dependent variable, and Threats/insults - as a mediator variable, transferring the effect of attitudes on Video materials.

Model estimation was performed using the LISREL 8.8 statistical program. The structural coefficients (standardized solution) and percentage of explained variance, after model simplification—removal of all nonsignificant paths—are presented in Fig. 1.

Fig. 1. Effects of Cyberbullying attitudes on Video materials, with a mediating role of Threats/insults (structural model at the level of observed variables, standardized solution, N=594)



Note: all coefficients are significant at $p < 0.01$.

The indices for the degree of conformity of the model: $\chi^2_{234}=3.27$, $p=0.35$, insignificant; $SRMR=0.012$; $RMSEA=0.012$; $CFI=1$; $NNFI=1$, indicate a high degree of fit with the empirical matrix.

The tested structural model shows good predictive capabilities, explaining 27% of the variance of Threats/insults and 60% of the variance of Video materials. After removing all nonsignificant paths, model simplification identified three significant predictors of Threats/insults: Immediate reinforcement of the cyberbully’s actions, Publicity of humiliation, and Absence of direct contact, with Immediate reinforcement playing a dominant role.

The results also testify to the absence of significant direct effects of attitudes towards cyberbullying on Video materials, i.e. the presence of only indirect effects through the mediating role of Threats/insults. Anonymity and Erasing the power differences were not found to be significant predictors of the studied forms of cyberbullying.

DISCUSSION:

Prevalence of cyberbullying

Noteworthy is the high frequency of cyberbullying involvement found – more than ¾ of the study participants had at somepoint in time engaged in cyberbullying. Most of them did it rarely, but content uploaded to the web practically remains there indefinitely, can be forwarded an unlimited number of times, and is available even years after the initial actions. Therefore, even a single act can lead to “countless incidents of victimization” [17].

According to the data from the literature review, cyberbullying survivors show a change in mental health - they often feel ashamed and scared, depressed. These intense emotions can turn into despair, frustration, and con-

tinued negative mood. They are accompanied by low self-esteem, problems with school studies and with the family, physical exhaustion and poor health. Another effect of cyberbullying is the change in orientations towards the future – when subjected to cyberbullying, the studied persons increase their pessimistic orientation towards the future [18].

Spiral of cyberaggression

The current study attempts to shed light on the prerequisites for cyberbullying by focusing on the role of attitudes towards cyberbullying. The results show that when the studied individuals understand, have the tacit approval of the specific characteristics of cyberbullying and realize the “advantages” of online aggression as a means for reprisal, this makes the actions of cyberbullying more likely. To the greatest extent, this concerns the immediate reinforcement and the experience of satisfaction of the online aggression for the author of cyberbullying. Publicity – virtually unlimited and repeated – as well as the absence of direct contact with the victim of cyberbullying, also have an impact on the perpetration of cyberbullying acts. In these conditions, it is more difficult to activate manifestations of sympathy and empathy in the aggressor for the pain caused; instead, mechanisms of moral disengagement are more likely to be activated. At the same time, the absence of direct contact is another important aspect: avoiding direct retaliatory aggression (revenge) from the victim.

The structural model clearly shows that when students “play”, try out what would happen in cyberaggression, and thus begin to accept these possibilities, then actual cyberaggression becomes a more natural course of action. There is a tendency to move from rela-

tively more innocuous attitudes that consider cyberbullying as a possibility but do not involve action to online insults and threats. This possibility has low to medium intensity. However, when it comes to the actual insults and threats in online communication, the tendency to use deliberate and demanding special effort (and involvement) compromising video material becomes much stronger. Anonymity, which makes more likely moral disengagement, larger audience of potential observers, difficulty in identifying the perpetrator, duration of bullying episodes (in 24/7 mode) make cyberbullying a different and possibly more painful phenomenon than traditional bullying face to face [19].

With the advancement of online technology, especially in the age of artificial intelligence, creating videos with any content has become much easier. If there is a culture of acceptance of cyberbullying, such as is present in our study, where almost 80% of adolescents studied not only have permissive attitudes towards cyberbullying but have participated in it, the use of artificial intelligence can reach grotesque proportions, as evidenced by one recently published case from South Korea. It is about an “epidemic of deepfake pornography” [20].

Users of encrypted chat rooms shared photos of girls or women they knew and used Artificial intelligence software to convert them into fake pornographic images within seconds. The perpetrators were mostly pupils under the age of 16, one group in a school had more than 2000 underage members. The practice spread to some of the most reputed universities as well as to almost 500 schools. For the teenagers involved, deepfakes have become part of their culture, seen as a game or a prank. The victims were predominantly young women and girls, including students and teachers, almost two-thirds in their teens. The crisis has affected online behaviour, with reports suggesting many children were removing photos from social media or deactivating their accounts. Offline behavior was also affected, involving hyper-vigilance in all interactions with people [20]. Even students and teachers who have not been directly affected were experiencing extreme fear and anxiety about potentially being used for sex crimes or distributed online without their knowledge [21].

This case clearly shows the size cyberbullying powered by AI can reach as well as the depth of its devastating consequences for the mental health of a very large number of victims, where even the uninvolved worried their turn might be coming next. But it also demonstrates the importance of the attitudes – they represent an interpretative framework, which allows actions to be taken by making them acceptable.

CONCLUSION:

In the conducted research, a high degree of cyberbullying among adolescents was found in the form of personal participation in the aggression. This shows that the school is a center of processes that are not taken into account. Students learn not only from the content of the school curriculum but also from each other. The present study shows that through the school community, they learn that cyberbullying is an acceptable way of human relations and can be practiced in a wide range of life situations.

According to the data obtained, attitudes towards cyberbullying are a prerequisite for online aggression, but they are not sufficient in themselves. Other important factors related to the motivation, planning and implementation of the actions are needed, related, for example, to feelings of resentment, envy, revenge, hostility, anger towards the other (the target). However, if aggressive intentions are present, attitudes towards cyberbullying significantly facilitate the transition to the actions. From this perspective, the assessment of attitudes using short and easy to use instruments such as those presented in this study is important for risk identification and early problem prevention.

The spread of cyber-aggression also shows the need for a targeted, comprehensive prevention program. It is important to monitor cyber-aggression in school, regularly examining attitudes towards cyber-bullying as the questions are directed not only to the presence of cyberbullying but also to how its permissibility is perceived. If the school cultivates the perception of cyberbullying as something undignified and the “victim” as a party deserving respect and support, this takes away the pleasure of the cyberaggressor and hence the immediate reinforcement for the aggressive actions. Creating and implementing cyberbullying prevention programs can help improve both student educational outcomes and learning and the development of coping skills in the virtual world, a major part of life for which adolescents are being prepared. These programs should be an integral part of the overall digitalization strategy of the modern school. As noted in the recent comprehensive review by Kasturiratna and colleagues [5], cyberbullying intervention programmes show promising results and merit devoting adequate resources to mitigating cyberbullying victimization.

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