

Doctoral School of Psychology of University of Pécs
Developmental and Clinical Psychology Doctoral Program

THE ROLE OF SOCIO-EMOTIONAL SKILLS IN CYBERBULLYING ENGAGEMENT

Dissertation

Nikolett ARATÓ

Supervisors:

Beatrix LÁBADI, PhD

Kata LÉNÁRD, PhD

2021

Pécs

TABLE OF CONTENTS

LIST OF TABLES	5
LIST OF FIGURES.....	6
1. GENERAL INTRODUCTION	7
1.1. Developmental Background – Specific Features of Adolescence.....	8
1.1.1. The Individual Psychological and Behavioural Changes during Adolescence.....	8
1.1.2. The Social Aspects of Adolescence.....	11
1.2. Traditional Bullying	12
1.2.1. Definitional Criteria, Types and Prevalence of Traditional Bullying.....	12
1.2.2. Participants and Underlying Dynamics of Traditional Bullying.....	14
1.2.3. Risk and Protective Factors in Traditional Bullying.....	15
1.2.4. Consequences of Traditional Bullying.....	17
1.2.5. Prevention and Intervention Programs against Traditional Bullying in Hungary.....	18
1.3. Cyberbullying.....	20
1.3.1. Definitional Criteria of Cyberbullying.....	20
1.3.2. Types of Cyberbullying.....	22
1.3.3. Prevalence of Cyberbullying.....	22
1.3.4. Cyberbullying Roles.....	25
1.3.5. Antecedents of Cyberbullying Engagement.....	26
1.3.6. Consequences of Cyberbullying Engagement.....	32
1.3.7. Prevention and Intervention Programs against Cyberbullying in Hungary.....	33
1.4. Aim of the Studies.....	33
2. FIRST STUDY - HUNGARIAN ADAPTATION OF THE CYBER VICTIM AND BULLYING SCALE (CVBS) AND THE EUROPEAN CYBERBULLYING INTERVENTION PROJECT QUESTIONNAIRE (ECIPQ).....	37
2.1. Introduction.....	37
2.2. Hungarian Adaptation of the Cyber Victim and Bullying Scale (CVBS).....	41
2.2.1. Method.....	42
2.2.2. Results.....	43
2.2.3. Discussion.....	50
2.3. Hungarian Adaptation of the European Cyberbullying Intervention Project Questionnaire (ECIPQ).....	53
2.3.1. Method.....	54
2.3.2. Results.....	55
2.3.3. Discussion.....	60
2.4. Overall Discussion of Study 1.....	61
3. SECOND STUDY – CYBERVICTIMIZATION AND CYBERBULLYING: THE ROLE OF SOCIO-EMOTIONAL SKILLS.....	65
3.1. Introduction.....	65

3.1.1. The Role of Socio-Emotional Skills in Cyberbullying Engagement.	65
3.1.2. Aim of Study.	67
3. 2. Methods.....	68
3.2.1. Participants.	68
3.2.2. Materials.	68
3.2.3. Procedure.....	69
3.2.4. Statistical Analysis.	70
3.3. Results.....	73
3.3.1. Differences among the age groups (12-14, 15-16, and 17-19 years olds) regarding their cyberbullying engagement.....	73
3.3.2. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in empathy.	73
3.3.3. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in moral disengagement.	73
3.3.4. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in emotion regulation strategies.	74
3.3.5. Determinants of cyberbullying perpetration and cybervictimization.	76
3.4. Discussion	77
4. THIRD STUDY – RISK AND PROTECTIVE FACTORS IN CYBERBULLYING: THE ROLE OF FAMILY, SOCIAL SUPPORT AND EMOTION REGULATION	82
4.1. Introduction	82
4.1.1. The Role of Social Support in Cyberbullying Involvement.	82
4.1.2. The Role of Family Communication, Cohesion and Adaptability in Cyberbullying Involvement.....	83
4.1.3. The Influence of Emotion Regulation on Cyberbullying Involvement.	84
4.1.4. Emotion Regulation as a Possible Mediating Factor.....	85
4.1.5. Aim and Hypotheses.....	86
4.2. Materials and Methods	86
4.2.1. Participants.	86
4.2.2. Materials.	87
4.2.3. Procedure.....	89
4.2.4. Statistical Analysis.	90
4.3. Results.....	95
4.3.1. Determinants of Cyberbullying Perpetration.	95
4.3.2. Determinants of Cybervictimization.	95
4.3.3. Model of Cyberbullying Perpetration.	99
4.3.4. Model of Cybervictimization.....	100
4.4. Discussion	101
4.4.1. Limitations.	104

4.4.2. Conclusions.	105
5. FOURTH STUDY – THE ROLE OF MORAL REASONING, MORAL DISENGAGEMENT, SOCIAL DESIRABILITY, EMOTION REGULATION, AND EMPATHY IN CYBER BYSTANDER BEHAVIOUR AND CYBERBULLYING ENGAGEMENT.....	106
5.1. Introduction	106
5.1.1. The Role of Moral Reasoning, Moral Disengagement, Social Desirability, Emotion Regulation, and Empathy in Cyber Bystander Behaviour.	106
5.1.2. The Role of Moral Reasoning, Moral Disengagement, Emotion Regulation, and Empathy in Cyberbullying Engagement.	110
5.1.3. Aim of Study.	112
5.2. Methods.....	113
5.2.1. Participants.	113
5.2.2. Materials.	115
5.2.3. Procedure.....	117
5.2.4. Statistical Analyses.....	118
5.3. Results	121
5.3.1. The Role of Moral Development, Moral Disengagement, Social Desirability, Emotion Regulation, and Empathy in Cyber Bystander Behaviour.	121
5.3.2. Determinants of Cyberbullying Engagement.	123
5.4. Discussion	129
5.4.1. Determinants of Cyber Bystander Behaviour.	129
5.4.2. Determinants of Cyberbullying Roles.....	132
5.4.3. Limitations.	135
5.4.4. Conclusions.	135
6. FINAL CONCLUSIONS	137
6.1. Implications for cyberbullying prevention and intervention	141
6.2. Overall Limitations.....	144
6.3. Final Conclusion	145
REFERENCES.....	146
APPENDICES	174
LIST OF PUBLICATIONS.....	193
Publications in the topic of the dissertation	193
Conference abstracts in the topic of the dissertation.....	193
Publications unrelated to the topic of the dissertation	194
Conference abstracts unrelated to the topic of the dissertation	195

LIST OF TABLES

Table 1: Prevalence rates of cybervictimization in Europe	24.
Table 2: Prevalence rates of cybervictimization in Hungary	25.
Table 3: Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the Scale of Cyber Bullying	44.
Table 4: Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the Scale of Cyber Victim	44.
Table 5: Correlations among cyberbullying perpetration, cybervictimization, age, anger expressions styles, and school climate	47.
Table 6: Correlations among the Scale of Cyber Bullying, its subscales, the Scale of Cyber Victim, and its subscales	49.
Table 7: Gender differences in cyberbullying perpetration and cybervictimization	50.
Table 8: Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the European Cyberbullying Intervention Project Questionnaire (ECIPQ)	56.
Table 9: Fitting indices of the ECIPQ's dimension of cyberbullying perpetration	57.
Table 10: Fitting indices of the ECIPQ's dimension of cybervictimization	58.
Table 11: Spearman correlations among cyberbullying perpetration, cybervictimization, age, perceived social support, externalizing and internalizing problems, and empathy	59.
Table 12: Summary of the psychometric properties, strengths and limitations of the CVBS-HU and the ECIPQ	63-64.
Table 13: Descriptive statistics and Spearman correlation for the variables in the second study	71.
Table 14: Descriptive data about the prevalence of cyberbullying and cybervictimization in gender and age groups in the second study	72.
Table 15: Results of MANOVAs in the second study	75.
Table 16: Results of linear regression analyses with stepwise extension with cyberbullying perpetration as dependent variable	76.
Table 17: Results of linear regression analyses with stepwise extension with cybervictimization as dependent variable	77.
Table 18: Descriptive statistics of the third study	92.
Table 19: Descriptive data about the prevalence of the cyberbullying groups in gender and age groups in the third study	93.
Table 20: Descriptive data of the cyberbullying groups' scores on the DERS, FACES IV, and MSPSS	94.
Table 21: Results of linear regression analyses with stepwise extension with cyberbullying perpetration as dependent variable and family factors, perceived social support and difficulties with emotion regulation as independent variables	97.
Table 22: Results of linear regression analyses with stepwise extension with cybervictimization as dependent variable and family factors, perceived social support and difficulties with emotion regulation as independent variables	98.
Table 23: Internet usage of the sample in the fourth study	114.

Table 24: Descriptive data about the prevalence of the cyberbullying groups in gender and age groups in the fourth study	114.
Table 25: Descriptive statistics and Spearman correlation for the variables in the fourth study	120.
Table 26: Determinants of antisocial cyber bystander behaviour	121.
Table 27: Determinants of prosocial cyber bystander behaviour	122.
Table 28: Determinants of ignoring/neutral cyber bystander behaviour	123.
Table 29: Determinants of cyberbullying roles: Results of likelihood ratio tests	125.
Table 30: Determinants of cyberbullying perpetration compared to outsiders	126.
Table 31: Determinants of cybervictimization compared to outsiders	126.
Table 32: Determinants of the bully-victim role compared to the outsider role	127.
Table 33: Determinants of cyberbullying perpetration in the fourth study	128.
Table 34: Determinants of cybervictimization in the fourth study	128.

LIST OF FIGURES

Figure 1: Result of the Scale of Cyber Bullying's confirmatory factor analysis	45.
Figure 2: Result of the Scale of Cyber Victim's confirmatory factor analysis	46.
Figure 3: Result of the confirmatory factor analysis of ECIPQ's cyberbullying perpetration dimension	57.
Figure 4: Result of the confirmatory factor analysis of ECIPQ's cybervictimization dimension	58.
Figure 5: Model of Cyberbullying Perpetration	99.
Figure 6: Model of Cybervictimization	100.

1. GENERAL INTRODUCTION

With the ongoing technological advancements, cyberbullying is becoming more frequent and problematic in adolescents' life. Hence, research, education, intervention, and prevention targeting cyberbullying have become crucial to help adolescents, their parents, and their teachers to cope with the new challenges cyberbullying creates. By exploring the developmental, psychological, and social background of cyberbullying engagement, targeted and effective intervention and prevention programs can be implemented.

Cyberbullying research is a new area in psychology, though there is a considerable number of studies investigating the background of cyberbullying engagement. However, the limited number of longitudinal studies, the indeterminate definitional criteria, and the inconsistent results make hard to sum up a generalized knowledge about cyberbullying. This prevents practitioners from the development of effective and evidence-based intervention and prevention programs. Hence, in spite of the great number of existing research, further clarification is crucial about the psychological, social, and developmental background of cyberbullying engagement.

Thus, the aim of my doctoral studies was to clarify some existing results concerning the background of cyberbullying engagement and to find new, developmentally relevant factors that might influence adolescents' cyberbullying involvement. The following studies have focused on examining the effect of moral and socio-emotional development, as well as social factors on cyberbullying engagement and cyber bystander behaviour. In the first study, the aim was to adapt questionnaires that enable researchers to conduct research exploring cyberbullying's developmental correlates and psychological background. In the second study, the goal was to explore the role of social factors, like family functioning and perceived social support from family and friends, on cyberbullying engagement. Additionally, not only the direct effects of these social factors, but also the indirect effects, through emotion regulation, were analysed. In the third study, the aim was to clarify the role of empathy in cybervictimization and to examine the specific maladaptive emotion regulation strategies that might characterize the coping with the consequences of cybervictimization. Further, another goal was to understand the association between the use of moral disengagement strategies and socio-emotional skills in cyberbullying perpetrators. In the last study, the goal was to explore the role of moral development, moral disengagement, emotion regulation, and empathy not only in cyberbullying engagement, but also in cyber bystander behaviour.

1.1. Developmental Background – Specific Features of Adolescence

Adolescence is the developmental phase that follows middle childhood and is the phase of transition between childhood and adulthood. By the time youngsters reach adolescence they have a developmental history: the aspects of their early development, the earlier biological, intellectual, cognitive, social and emotional developmental attributes, experiences inside and outside of the family, the prior peer and school social group characteristics (Adams & Berzonsky, 2003). With the onset of puberty, i.e. the hormonal (increasing levels of progesterone, estrogen and testosterone) and the physical (growth, redistribution of body fat and muscle tissue, secondary sexual characteristics, etc.) changes, the wide range of biological, physical, neural, cognitive, psychological, and social changes begin to take place from early adolescence throughout the adolescent years. The developmental changes happen during the three phases of adolescence: (1) early adolescence from approximately 10 until 13 years of age, (2) middle adolescence from approximately 14 until 17 years of age, (3) late adolescence from approximately 18 until 24 years of age (Elliott & Feldman, 1990; Neinstein et al., 2009; Steinberg, 2002, 2014). Youngsters have to cope with and to adapt to the bodily (e.g. secondary sex characteristics, weight gain, changes in body composition) and neural (e.g. pruning, maturing prefrontal cortex) changes that go on during this time period (Archibald et al., 2003; Giedd, 2004; Giedd et al., 1999). Regarding cognitive development, adolescents become able to understand abstractions, symbolic logic, and cause-effect relations, i.e. using formal operations (Piaget, 1964). These biological and cognitive changes initiate the further changes that concern the psychological and the social areas of adolescents' lives (Archibald et al., 2003; Magnusson et al., 1985).

1.1.1. The Individual Psychological and Behavioural Changes during Adolescence.

During adolescence a variety of changes concern adolescents' emotions, socio-emotional and moral skills, behaviour, and self-concept. Adolescents' main task is to develop a stable identity and self-concept (Erikson, 1956; Marcia, 1980), furthermore their empathic and moral skills develop further (Eisenberg-Berg & Mussen, 1978), and they become more able to regulate their emotional states and behaviours (Gestsdottir & Lerner, 2008; Zeman et al., 2006). As these developmental changes are quite challenging and stressful, there may be a decrease in adolescents' self-esteem (Simmons & Blyth, 1987; Thornburg & Jones, 1982), as well as an increase in adolescents' negative emotions and emotional liability (Buchanan et al., 1992; Larson et al., 1980; Larson & Lampman-Petratis, 1989; Rosenblum & Lewis, 2003), risk

behaviours (Hurrelmann & Richter 2006; Schulenberg & Maggs, 2002), depressive mood (Harter & Whitesell, 1996; Nolen-Hoeksema & Girgus, 1994), symptoms of anxiety (Voltas et al., 2017), and suicidal thoughts (Portes et al., 2002; Wilburn & Smith, 2005).

As mentioned previously, adolescents' most prominent task is to form a synthesized and integrated identity that is a conscious sense of their individual uniqueness and a continuous sense of their experiences (Erikson, 1956). Adolescents go through the process of exploration, i.e. searching for meaningful roles and values, to achieve commitment to a certain identity. If adolescents form commitments without explorations, their identity status is foreclosed, they most likely base their commitments on parental values. If adolescents go through explorations, but have not yet formed commitments, they are in the phase of moratorium. If they do not explore their options and do not reach a commitment, they are in the status of identity diffusion (Marcia, 1980). The developmental goal of adolescence is to explore the various options adolescents have then commit to personally expressive roles, norms, and values. Whereas, their socio-emotional and moral skills, and behavioural tendencies undergo development as well (Eisenberg-Berg & Mussen, 1978; Gestsdottir & Lerner, 2008; Zeman et al., 2006).

Changes in the cognitive skills underlie the developmental changes in adolescents' *empathic skills*. As the cognitive role-taking or perspective-taking skills and abstract reasoning develop further, adolescents become able to experience emotions of others or of a group of people, and to feel the vicarious emotions of others, e.g. to share the pain of others on a larger scale (Roberts & Strayer, 1996; Rosenblum & Lewis, 2003). Further, adolescents have all the basic skills required for empathic responses and prosocial action, i.e. self-awareness and the ability to infer others' emotional experiences (Lewis, 1997; Rosenblum & Lewis, 2003). Additionally, with the development of the prefrontal cortex, which is the neural background of self-control, planning, problem solving, multi-tasking, decision-making, self-awareness, and inhibition, adolescents' *emotion regulation* capacities develop further as well (Archibald et al., 2003; Giedd, 2004; Giedd et al., 1999; Zeman et al., 2006). Thus, they become able to regulate or modulate intense emotions, self-soothe independently, and manage their emotional states in order to reach a certain goal or carry out a certain behaviour (Eisenberg, 2000).

Contradictory views coexist regarding adolescents' *morality* (Smetana & Turiel, 2003). Some theorists (Fass, 1977) described adolescents as highly individualistic and lacking moral commitments. Others (Colby & Kohlberg, 1987; Eisenberg et al., 1998; Kohlberg & Gilligan, 1971) showed that understanding of the society's moral underpinnings and principled moral judgements emerge during adolescence. Indeed, according to Kohlberg's theory (1984)

adolescents develop abstract, self-chosen ethical and moral principles. Further, adolescents become able to distinguish between what is moral and what is legal as they come to understand that laws are human constitutions that can be challenged when found unjust or contradictory to human rights or one's own moral principles. Regarding the development of *prosocial moral reasoning* (Eisenberg et al., 1998), adolescents use empathic and/or internalized values when they have to make moral decisions. Indeed, adolescents make moral judgements based on sympathetic feelings or on internalized values, norms, and responsibilities (Eisenberg et al., 1998). However, adolescents use moral reasoning strategies flexibly, depending on the social situation, the sense of personal agency, and societal conventions (Smetana & Turiel, 2003).

The developing cognitive, socio-emotional and moral reasoning skills have an effect on both *aggressive and prosocial behaviour* during adolescence. With the development of more advanced perspective-taking and empathic skills, adolescents are more likely to behave prosocially (Davis, 2018; Eisenberg et al., 2018). Since they are more skilled at taking others' perspective, thus feeling others' vicarious emotions (i.e. personal distress), they are more likely to help others in need. Additionally, emotion regulation is a key factor in prosocial behaviour. If adolescents have difficulties regulating the negative affects they feel as a consequence of witnessing others' distress, they may experience such high levels of negative arousal that prevent them from helping or responding empathically (Eisenberg, 2000). Moral development also contributes to prosocial behaviour. The development of personal moral principles and the ability to expect certain moral emotions as consequences of behaviour regulates adolescents' behaviour and inhibits immoral action (Eisenberg et al., 1991). On the other hand, when there is a deficit in the development of empathy, emotion regulation, and/or moral skills, adolescents are prone to behave antisocially or aggressively (Gini et al., 2014; Lovett & Sheffield, 2007; Robertson et al., 2012). Indeed, adolescents who lack empathic skills are more likely to behave aggressively towards others because they are unable to feel the vicarious emotions of others, so they do not understand or sense the harm they have caused for others (Lovett & Sheffield, 2007). Further, if adolescents are unable to regulate their negative emotional states or impulses that might lead to aggressive and/or problem behaviours, e.g. substance abuse. As by being incapable to understand and process emotions, they might turn the unbearable emotional states into externalizing behaviours, i.e. aggressive acts (Robertson et al., 2012). Moral disengagement, lack of internalized moral principles, and lower levels of moral reasoning (e.g. hedonistic prosocial moral reasoning) are also associated with aggressive behaviour. If adolescents' morality is on an immature developmental level, they are unable to use abstract, moral

principles to guide their behaviour, or to make expectations on moral outcomes of their actions, they are more likely to act in ways that are harmful for others (Gini et al., 2014).

1.1.2. The Social Aspects of Adolescence.

Adolescence is not only a critical phase for adolescents but also for their family as the family system needs to adapt to the developmental changes that the adolescent family member goes through (Granic et al., 2003). Most parents and their children manage to maintain a warm, close relationship during the adolescent years, although they usually spend less time together (Baumrind, 1991). However, family conflicts become quite frequent during early adolescence as adolescents, as a developmental goal, seek more independence and autonomy (Laursen et al., 1998). To help adolescents' healthy development, parents should offer warmth and support, encourage independence in the family communication. Whereas, they also should monitor adolescents' behaviour and set clear rules (Baumrind, 1991; Dishion & McMahon, 1998; Everri et al., 2015; Steinberg, 2000). Hence, family functioning contributes adolescents' successfulness in reaching their developmental goals, i.e. independency, autonomy, and responsibility. Moreover, family functioning also affects adolescents' developing socio-emotional and moral skills. Indeed, how parents balance between their monitoring and the adolescent's need for independency influences the adolescent's developing emotion regulation skills (Morris et al., 2007). Furthermore, both warm and supportive family relationships and flexible family adaptability help the development of sensitive empathic skills (Henry et al., 1996; Olson et al., 1979) and advanced moral reasoning (White, 2000). Thus, positive parenting support adolescents' emerging prosocial behaviour towards others in need (Eberly & Montemayor, 1998; Padilla-Walker et al., 2016). Whereas, lack of parental support, conflictual family relationships and communication enhance the chance of aggressive behaviour during adolescence (Cummings et al., 2003; Dekovic et al., 2004; Van der Graaff et al., 2012).

By spending less time with their family members, adolescents spend most of their time with their peers. Therefore, peer relationships become more prominent during adolescence (Hartup & Stevens, 1997). As family factors, peer relationships also influence adolescents' psychological development. Positive and supporting peer relationships help the development of adaptive emotion regulation (Steinberg & Silk, 2002), empathic (Laible, 2007; You & Kim, 2016) and moral (McDonald et al., 2014) skills. Additionally, peer relationships also influence adolescents' aggressive and prosocial behaviour via peer group norms (Laninga-Wijnen et al., 2018). However this relationship is bidirectional, as adolescents' emotion regulation, empathic

skills, and social competence affect their ability to form and maintain social relationships (Eisenberg & Fabes, 1992; Gross & John, 2003; Sroufe et al., 1984). With the technological advancements taking place, adolescents are prone to form and maintain social relationships on the Internet as well (Gross, 2004; Valkenburg & Peter, 2007; Wolak et al., 2003). Adolescents also use the social media to reinforce existing, offline relationships (Subrahmanyam & Greenfield, 2008). Although, there are concerns about adolescents' online relationships. Some raised concerns because online communication lacks important features of face-to-face communication, like eye contact and body language, thus might be less rich and result in lower quality relationships (Kraut et al., 1998; Subrahmanyam & Greenfield, 2008). On the other hand, online communication can be as supporting as offline communication (Oh et al., 2014), and can strengthen the already existing, offline relationships (Cummings et al., 2006; Valkenburg & Peter, 2007).

All the aforementioned social factors and developmental changes, i.e. the better ability to regulate one's emotions and behaviour, the better planning and decision-making strategies, higher levels of empathic skills and moral reasoning, as well as warmth and support from peers and family all contribute to adolescents' healthy development (Granic et al., 2003; Rosenblum & Lewis, 2003). Whereas, lack of empathic and moral reasoning skills, difficulties with emotion regulation, low support from peers and family, conflictual relationships with peers and parents may increase the chance of risk and problematic behaviours, e.g. substance abuse, or involvement in bullying or cyberbullying (Zych et al., 2019).

1.2. Traditional Bullying

1.2.1. Definitional Criteria, Types and Prevalence of Traditional Bullying.

Traditional bullying appears to be a universal phenomenon during the school years in several countries around the world (Smith et al., 2019). Traditional bullying was first defined by Olweus (1994a, p. 1173): "*A student is being bullied or victimized when he or she is exposed repeatedly and over time, to negative actions on the part of one or more other students.*" Further, Olweus (1994b) described three major aspects that distinguish traditional bullying from general aggression, i.e. *repetition*, *power imbalance*, and *intentionality*. *Repetition*, as a definitional criterion, is crucial for distinguishing traditional bullying acts from occasional negative actions that are not directed on a specific student. Additionally, there is a *power imbalance* between the bully and the victim, as the victimized student has some kind of physical or psychological disadvantage compared to the bully. Thus two students' fighting or arguing

with the same physical or psychological strengths, does not count as a bullying incident. As a consequence of power imbalance, the victim has difficulties in defending himself or herself. At last, the perpetrator has the *intent to cause harm* to the victim or to damage the victim's relationships or reputation to reach a certain goal (e.g. hierarchical status in the class) (Olweus, 1994b; Sutton et al., 1999). Based on these characteristics, traditional bullying seems to be unprovoked and deliberate, thus can be considered as proactive, goal-directed aggression (Coie et al., 1991).

There are different types of categorization of traditional bullying acts. First, there are *direct* and *indirect* forms of bullying. *Direct* bullying acts are when the victim experiences open, face-to-face attacks from the bully or bullies. On the contrary, *indirect* bullying is when the attacks are hidden, and happen in the form of social isolation, rumours or exclusion (Björqvist et al., 1992; Olweus, 1994b). Another type of categorization can be by the form of aggression used during traditional bullying incidents, i.e. physical, verbal, and relational or social bullying (Björqvist et al., 1992; Salmivalli et al., 2011). *Physical bullying* incidents are direct and happen by hitting, pushing, or kicking the victim. *Direct verbal bullying* means threatening or name-calling the victimized student face-to-face. Whereas, the goal of indirect, *relational or social bullying* is to damage the victim's social relationships, self-esteem and/or reputation by spreading rumours, exclusion, or persuading others not to play/talk with the person (Björqvist et al., 1992; Crick & Grotpeter, 1995; Underwood et al., 2004).

The prevalence of traditional bullying varies among different studies, countries, and cultures (Griffin & Gross, 2004; Rigby & Smith, 2011). Although the studies applied the same definition of traditional bullying, the differences might originate from the different types of traditional bullying assessed, the wording of the questions, and the different response categories used in the studies (Rigby & Smith, 2011). As reported by Molcho and colleagues (2009), the lowest rates of bullying victimization (14.6%) and of bullying perpetration (15.4%) were found in Sweden, whereas the highest rates of bullying victimization (56.3%) and of bullying perpetration (54.9%) were found in Lithuania. However, the prevalence rates of both bullying perpetration and victimization seem to be decreasing (Molcho, et al., 2009; Rigby & Smith, 2011). There were three major studies in Hungary that studied the frequency of traditional bullying among primary and high school students on representative and large samples: the *Health Behaviour in School Aged Children* (HBSC), the *European School Survey Project on Alcohol and Other Drugs* (ESPAD), and the *Institute of Educational Research and Development's* (Oktatáskutató és Fejlesztő Intézet, OFI) research. According to the ESPAD's

results, 13.3 % of high school students were victims of traditional bullying, whereas 13.5% of high school students perpetrated traditional bullying (Elekes, 2015). The OFI's research, using a different traditional bullying measurement, have found that 15.2% of the students were victimized on a regular basis, whereas 7% of students perpetrated traditional bullying regularly. This study also showed that 52.7% of high school students were victimized occasionally and 44.1% of the students perpetrated traditional bullying acts occasionally (Simon et al., 2015). According to the 2013/2014 HBSC study, 5.1% of the students from grades 5, 6, 7, 8, 9, 10, and 11 are victimized at least one time a week, whereas 3% reported the perpetration of traditional bullying (Németh & Költő, 2016). The 2017/2018 HBSC showed that 18.9% of students from grades 5-11. were victimized once or twice, whereas 6.7% of the students were victimized on a regular basis. Moreover, 21.1% of the students perpetrated traditional once or twice, while 3.8% was bullying others regularly (Várnai, 2019).

1.2.2. Participants and Underlying Dynamics of Traditional Bullying.

For first sight, traditional bullying incidents happen in the dyadic relationship of the bully and the victim. There are two types of victims, i.e. *passive or submissive victims* and *provocative victims or bully/victims* (Griffin & Gross, 2004). *Passive victims* are quiet, sensitive, lonely, physically weak, highly anxious and insecure and have internalizing problems (Carney & Merrell, 2001; Olweus, 1994b). *Provocative victims* are both anxious and aggressive and have behavioural problems and difficulties with social skills (Olweus, 1994b). Although, according to the systemic model of bullying, traditional bullying is a systemic problem that has causes on different levels of the social ecological system (Bronfenbrenner, 1989), i.e. individual traits, microsystem, mesosystem, exosystem, and macrosystem levels. Thus, traditional bullying is not only happening in the dyadic relationship of the bully and the victim, but in the social circle of the classmates, teachers, school/school personnel, family, community, and culture (Swearer & Doll, 2001). The individual characteristics of students (e.g. tendency for aggression, sensation seeking), peer interactions, the school climate and parenting (i.e. microsystem) and the community (i.e. exosystem) all influence bullying involvement directly or indirectly (Lee, 2011). Moreover, according to the mentalizing social system approach, bullying is the symptom of a dysfunctional or pathological social system functioning, where the power dynamics are off balance. This pathological social system is coercive, individuals are pressured to fit the stereotyped roles (i.e. victim, victimizer, bystanders) and they fail to recognize and mentalize each other adaptively. The whole school system is involved, the school personnel, teachers, and students are all unable to reflect (or mentalize) on the causes of violence in the school

(Twemlow & Fonagy, 2005). Therefore, besides bullies and victims bystanders have a significant role in traditional bullying as well. Salmivalli (1999) identified four different bystander behaviours: assistant of the bully, reinforcers of the bully, defenders of the victim and outsiders. Assistants join the bully in the negative act, reinforcers give positive feedback to the bully by laughing or cheering, defenders help, comfort, or support the victim, whereas outsiders do not intervene in any way in the bullying incident (Salmivalli, 1999).

1.2.3. Risk and Protective Factors in Traditional Bullying.

Passive or submissive victims are usually anxious, insecure, cautious, and sensitive. Additionally, they are socially withdrawn, quiet, passive, and shy. On account of these psychological characteristics, they have a negative view of themselves, i.e. low self-esteem and they also have difficulties with fitting in the peer group, thus they have little emotional support from their peers (Carney & Merrell, 2001; Olweus, 1994b). Further, victims also show symptoms of internalizing problems (Carney & Merrell, 2001; Craig, 1998). On the other hand, *provocative victims* are hot-tempered, aggressive, and offensive, whereas, like submissive victims, they also show symptoms of anxiety (Olweus, 1994b). They also might be hyperactive, restless, and unconcentrated as well (Olweus, 1994b). Therefore, provocative victims have difficulties in the classroom setting and may violate norms thus these behaviours may lead to their subsequent victimization (Greene, 2000). Some studies have found, that unresponsiveness and uninvolved parenting characterizes the parenting style of victims' parents (Flouri & Buchanan, 2002; Ok & Aslan, 2010). On the other hand, non-responsive parenting, i.e. overprotective and permissive parenting, was also found to be a risk factor of victimization. The overprotective parenting style endangers children by rearing them to be passive and submissive that are two specific characteristics of victims (Carney & Merrell, 2001; Olweus, 1994b). Whereas, permissive parenting is not demanding, teaches no norms or rules to the children thus children do not know what behavioural rules they should follow thus their classmates may pick on them because of their norm breaking behaviours (Georgiou, 2008).

There are several protective factors that decrease the chance of victimization. Indeed, certain individual factors like social competence, intelligence, and problem solving are protective against victimization (Cook et al., 2010; Kowalski et al., 2014). Additionally, social factors, like school and family environment, and peer context, can also be protective against victimization. Positive school climate and school safety protect children from engaging in traditional bullying acts (Cook et al., 2010; Kowalski et al., 2014). Positive family environment

and parental support also serve as protective factors against traditional bullying engagement (Cook et al., 2010; Lereya et al., 2013), as does peer support and high peer status (Cook et al., 2010; Heerde & Hemphill, 2018; Kowalski et al., 2014).

Perpetrators of traditional bullying have a strong need to dominate others, and they have a positive attitude toward using aggressive means to reach their goals and toward violence (Carney & Merrell, 2001; Olweus, 1994b). They are impulsive, hot-tempered, and they have low frustration tolerance (Bernstein & Watson, 1997; Olweus, 1994b). They show little empathy toward others (Bernstein & Watson, 1997; Olweus, 1994b), although they are prominent at knowing how to hurt others, i.e. they have high levels of cognitive empathy (Sutton et al., 1999). Further, familiar context and parental child-rearing practices also have an effect on bullying perpetration. Students who come from a harsh and abusive family environment are more likely to perpetrate bullying in the school. Additionally, power-assertive, inconsistent, neglectful, and aggressive child-rearing practices also enhance the chance of bullying perpetration (Carney & Merrell, 2001; Dehue et al., 2012).

There are protective factors against bullying perpetration as well. High self-esteem, social competence, high empathy, and problem solving skills are individual factors that are associated with low bullying perpetration (Cook et al., 2010; Kowalski et al., 2014; Mitsopoulou & Giovazolias, 2015; Tsaousis, 2016; Zych et al., 2019). Certain personality traits are also protective against bullying perpetration, as low levels of bullying perpetration were associated with higher levels of openness, agreeableness, and consciousness (Mitsopoulou & Giovazolias, 2015). Social factors might also be protective against bullying perpetration as well. Both positive school and home environment serves as protective factors against bullying perpetration (Cook et al., 2010; Kowalski et al., 2014). Further, high peer status and peer support decrease the chance of bullying perpetration (Cook et al., 2010; Heerde & Hemphill, 2018; Kowalski et al., 2014).

Additionally, there appear to be *gender differences* regarding traditional bullying engagement (Cook et al., 2010; Craig et al., 2009; Currie et al., 2008; Smith, 2016; Smith et al., 2019). Indeed, boys are more likely to bully other (Cook et al., 2010; Craig et al., 2009; Smith et al., 2019). Whereas, regarding victimization the results are quite inconsistent (Smith et al., 2019). There are studies (Cook et al., 2010; Currie et al., 2008; Smith et al., 2019) that have found that boys also are victimized at higher rates than girls are. Other studies (Craig et al., 2009) have found that girls are more likely victims of traditional bullying. Further, gender differences might vary by the type of traditional bullying. Indeed, boys are more likely to engage in direct,

physical bullying compared to girls (Björqvist et al., 1992; Smith, 2016). Whereas, girls bullied others more likely in indirect ways, by social exclusion or isolation (Rivers & Smith, 1994). Although, it was shown that the rate of victimization regarding relational or social bullying was approximately the same among both girls and boys (Craig, 1998).

1.2.4. Consequences of Traditional Bullying.

Involvement in traditional bullying affects both perpetrators and victims; furthermore, bystanders are also influenced by witnessing the bullying incidents between the bully and the victim. There are four areas where adolescents can experience the negative consequences of victimization: psychological well-being, social adjustment, psychological distress, and physical wellness (Rigby, 2003). Regarding *psychological well-being*, victims of traditional bullying usually report low levels of self-esteem and low global self-worth (Olweus, 1994b, Slee & Rigby, 1993). Victims are also characterized by poor *social adjustment*. As a consequence of traditional bullying victimization, students develop an aversion to the school environment, thus truancy is quite frequent among victimized students (Kochenderfer & Ladd, 1996; Rigby & Slee, 1993). Further, *loneliness* can be a consequence of bullying involvement as well, as victimized students have difficulty forming relationships subsequent of their victimization (Campbell, 2013). Several studies investigated the *psychological distress* that victimized students experience. Victimized children report symptoms of anxiety and insecurity (Olweus, 1994b). Further, they experience negative affective states, i.e. they feel irritable, nervous, and panicky after bullying incidents (Sharp, 1995) and they also have sleeping problems (Van Geel et al., 2016). Additionally, they experience symptoms of depression as well (Claes et al., 2015; Slee, 1995; Vanderbilt & Augustyn, 2010). In the most serious cases, victimization is associated with suicidal ideations and suicidal behaviour (Rigby, 2003; Rigby & Slee, 1999; Vanderbilt & Augustyn, 2010). Regarding *physical wellness*, victims of traditional bullying usually report psychosomatic symptoms, like headaches, mouth sores, “thumping “ in the chest, and stomach aches (Rigby, 2003; Vanderbilt & Augustyn, 2010; Wolke et al., 2001). Perpetrators of traditional bullying also experience high levels of depression (Claes et al., 2015; Slee, 1995; Vanderbilt & Augustyn, 2010) and suicidal ideation (Rigby, 2003; Rigby & Slee, 1999). They also have poor social adjustment, they are likely to have social and externalizing problems. Further, bullies are at higher risk of dropping out of school (Vanderbilt & Augustyn, 2010). Both for victims and bullies there are several long-term consequences of bullying as well. Victims might suffer from various disorders, like psychosis, depression, and anxiety disorders in adulthood. Further, they can have poor self-esteem and abusive relationships. The long-term

effects of perpetrating bullying can be the development of psychiatric disorders like for victims. Bullies might suffer from substance abuse, antisocial personality disorder, and anxiety disorders in adulthood. Childhood bullies are more likely convicted for crimes in adulthood, and they have problems with employment and romantic relationships (Vanderbilt & Augustyn, 2010). Whereas, bystanders of the bullying incidents report feelings of confusion, isolation, and “stuckness”. When they witness a bullying incident they meet with their own vulnerability and feel like they are isolated from their peers as well (Hutchinson, 2012).

1.2.5. Prevention and Intervention Programs against Traditional Bullying in Hungary

Both prevention and intervention programs are widely used to prevent and tackle bullying in schools. Prevention programs aim to prevent the occurrence of bullying incidents on three levels: The first component of prevention programs is the *cognitive* level, this contains of psychoeducation about the nature of bullying, the role of the group and the feelings of the victim. The second component is the *behavioural* level, this includes practical information about how to intervene in bullying situations. The third component is the *emotional/motivational* level, the aim of anti-bullying programs is to form an anti-bullying attitude, group norms against the acceptance of bullying behaviour (Jármí, 2019). Whereas, the main goal of intervention programs is to reduce the occurrence of already present bullying behaviours and to prevent the emergence of new problems. Intervention programs operate at the individual, class and school levels following a strict whole-school anti-bullying policy on every level. The school personnel, teachers, parents, and students are all involved in following the preset routines, rules and strategies of communication and action to tackle bullying in the school (Olweus, 1994a).

NyugiOvi Program is a prevention program developed for preschool children. The program’s aim is to decrease the prevalence of aggression in preschool and to form an anti-bullying attitude during the preschool years hence preventing later school bullying engagement. The program includes modules about inclusion and acceptance, socio-emotional skills, anti-bullying and restorative attitude, peer intervention, and asking for help (Jármí, 2019). The *KiVa Program* is a Finnish anti-bullying program developed for primary schools. The program includes three core modules: prevention, intervention and monitoring. In the prevention program all students are involved and the focus is on preventing bullying. In the intervention program only involved students participate and the goal is to help the school to tackle bullying. The KiVa monitoring tool helps schools with feedback on how effective the program is and how could they improve their anti-bullying strategy (Jármí et al., 2012).

As it was shown in the *1.2.3. subsection*, social and emotional competencies affect both traditional bullying perpetration and victimization, moreover bystanders' reactions as well (Cappadocia et al., 2012; Gini et al., 2008; Nickerson et al., 2008). Therefore, the use of Social Emotional Learning (SEL) theory in bullying prevention and intervention is an evidence-based direction. SEL concentrates on the enhancement of social and emotional skills, like empathy, emotion management, social problem solving, and social competence (Durlak et al., 2011; Smith & Low, 2013) and contributes to a positive school climate (Hawkins et al., 2001). SEL focuses on five core areas: self-awareness, social awareness, self-management and organization, responsible problem solving, and relationship management. Thus, it helps the development of adaptive social (empathy, emotion regulation, perspective taking), friendship, decision-making and conflict resolution skills (Zins et al., 2004). Thus, it contributes to the decrease of bullying in the school (Espelage et al., 2015; Nickerson et al., 2019; Smith & Low, 2013). Such a SEL-based program is the *European Network Against Bullying in Learning and Leisure Environments (ENABLE)* that is an anti-bullying program developed for high schools and adapted to Hungarian by Éva Jármi and Dóra Várnai (Jármi, 2019). The ENABLE consists of two modules: the SEL module and the Anti-Bullying (AB) module. The SEL module concentrates on topics that cover emotional intelligence, understanding of own and others' emotions, emotion regulation, moral disengagement, and taking responsibility. Thus, the SEL module targets the socio-emotional competencies that can help bystanders to effectively intervene in bullying incidents. The AB module contains psychoeducation about bullying, direct and indirect strategies of intervention and encouragement to report bullying. The aim of the AB module is to form an anti-bullying attitude and group norm and to form rules and policy for standing up against bullying.

The *Peaceful Schools* is based on the mentalizing social system theory (Twemlow & Fonagy, 2005) and is more likely a philosophy than a fully developed anti-bullying program. Peaceful Schools does not have different modules or lesson plans, the core topics of the "program" are restorative techniques, assertive communication, promoting socio-emotional skills, especially mentalizing skills. The school personnel, teachers and students can be creative and innovative in how they achieve the aim of the program that is to create a mentalizing, positive and inclusive school environment. The philosophy of Peaceful Schools is that if the community of the school is a mentalizing one then aggression will not be accepted thus the members of the community will be able to be empathetic with each other and resolve conflicts in peaceful ways (Jármi, 2019; Twemlow & Fonagy, 2005). A special type of bullying prevention is drama pedagogy:

The students participate in interactive theatrical plays (e.g. 7 days by Nézőművészeti Kft.) where they process the topic of bullying with the help of the play, drama teacher and a psychologist concentrating on the core topics of prevention programs (Jármi, 2019).

1.3. Cyberbullying

1.3.1. Definitional Criteria of Cyberbullying.

As a consequence of the ongoing technological advancements and the broader usage of technological devices, the Internet has become a significant part of everyday life. Internet usage has many advantages, however there are several online risks that adolescents are exposed to (Holfeld & Grabe, 2012), such as online grooming, problematic Internet use, and cyber dating violence (Machimbarrena et al., 2018). Further, the Internet has many features (e.g. anonymity, instant messaging, etc.) that can be used to commit conduct behaviours, such as cyber-hacking, cyberstalking, and several forms of cyber aggression, like cyberbullying (Kowalski et al., 2014).

Cyberbullying is often identified as a subtype of traditional bullying taking place in a new context that is the Internet (Li, 2007; Wang et al., 2010). Thus the definitions describing cyberbullying, partly adapt Olweus' definitional criteria (1994) for traditional bullying and partly use the specific characteristics of cyberbullying (Berne et al., 2013; Nocentini et al., 2010; Slonje & Smith, 2008; Spears et al., 2009). A main question is, for both researchers and practitioners, how Olweus' definitional criteria (imbalance of power, intentionality, and repetition, 1994) can be used to describe cyberbullying (Corcoran et al., 2015). Therefore, several definitions exist in the literature defining cyberbullying (Berne et al., 2013). According to one, more general definition cyberbullying is "*an aggressive act carried out using electronic means by a group or individual repeatedly and over time against a victim who cannot easily defend himself or herself*" (Smith et al., 2008, p. 376.). Willard (2007), in a more detailed definition, described cyberbullying as an act of sending and/or posting hostile and cruel messages and pictures via the Internet or other devices of ICT (Information Communication Technology) that causes psychological and/or social harm. Shariff and Gouin (2005) perceived cyberbullying as a type of traditional bullying, that causes harm to the victim via electronic devices, mobile phones, blogs, different websites, and chat rooms. These definitions included both definitional criteria of traditional bullying (i.e. imbalance of power, intentionality, and repetition, Olweus, 1994b) and the specific characteristics of cyberbullying (e.g. Internet as the platform or medium of bullying acts).

Kwan and Skoric (2013) identified three specific characteristics of cyberbullying that are the unlimited capacity of the Internet, the perpetrator's anonymity, and the broad audience. In cases of traditional bullying, only a small circle is witness to the victim's humiliation. Whereas via the Internet cyberbullying acts can be seen, commented, and/or shared by several people, friends, acquaintances, friends and/or acquaintances of friends, and even strangers. Thus, a broader audience is witness to the cybervictim's humiliation compared to traditional bullying; consequently, neither the cybervictim, nor the cyberbully is able to control the course of events (Cetin et al., 2011). As the Internet has unlimited capacity, the negative acts happening to the victim can be shared, commented and, in general, are available for a longer time. Further, the harmful content can be downloaded, repeatedly uploaded by others, therefore the cyberbullying perpetrator loses control over the harmful content and thus might feel less responsible for the negative events happening to the victim (Kwan & Skoric, 2013). As well as, the Internet offers the opportunity for the perpetrator to stay anonymous through fake profiles (Casas et al., 2013; Hinduya & Patchin, 2008). Approximately 20-30 % of cybervictims do not know the identity of the cyberbully (Slonje & Smith, 2008; Smith et al., 2008). Studies investigating the consequences of anonymous cyberbullying provide conflicting results: some studies (Slonje & Smith, 2008; Smith et al., 2008) showed that anonymity causes more severe harm on the victim. Whereas, Nocentini and colleagues (2010) found contradictory evidence showing that being cybervictimized by a known person is more harmful. Another specific characteristic of cyberbullying is its 24/7 nature, because the victim of cyberbullying is available for the cyberbullying perpetrator anytime and/or anywhere given the Internet's specific features, so the victim cannot hide from the bullying at home compared to traditional bullying (Kowalski & Limber, 2007). As showed above, there is lack of consensus regarding the definitional criteria of cyberbullying and there is still ongoing research on the clarification of the definition of cyberbullying (Berne et al., 2013). Although, maybe Tokunaga's (2010) definition is the clearest so far, including intentionality and repetition, from Olweus' definitional criteria (1994), as well as anonymity and the 24/7 nature of cyberbullying as cyberbullying's specific characteristics (Berne et al., 2013): *"Cyberbullying is any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on other. In cyberbullying experiences, the identity of the bully may or may not be known. Cyberbullying can occur through electronically-mediated communication at school; however, cyberbullying behaviors commonly occur outside of school as well"* (Tokunaga, 2010, p. 278.).

1.3.2. Types of Cyberbullying.

Advances in communication technology may create specific opportunities for cyberbullying (Vandebosch & Van Cleemput, 2008; Ybarra & Mitchell, 2004), for example, social media sites unintentionally support and maintain cyberbullying by forming groups, posting pictures and videos and commenting others' shared content (Kwan & Skoric, 2013). As the ICT (Information Communication Technology) developed throughout the years, new forms of cyberbullying emerged as well. On one hand, the different forms of cyberbullying can be categorized by the means used during cyberbullying acts (Slonje et al., 2013). Early research divided cyberbullying into two main categories, i.e. Internet and mobile phone bullying (Ortega et al., 2009). Other studies described more specific types of media used in cyberbullying: mobile phone calls, text messages, picture/video clip bullying, e-mails, chatroom, instant messaging, and websites (Smith et al., 2008). Otherwise, cyberbullying can be categorized by the type of action or its content (Slonje et al., 2013). Willard (2007) identified eight types of cyberbullying acts: flaming, harassment, denigration, impersonation, outing, trickery, exclusion, and cyberstalking. Whereas, Rivers and Noret (2010) described the different forms of verbal cyber bullying: threat of physical violence, abusive or hate-related, name calling, death threats, ending of platonic relationship, sexual acts, demands/instructions, threats to damage existing relationships, threats to home/family, and menacing chain messages.

1.3.3. Prevalence of Cyberbullying.

The prevalence rates of cyberbullying engagement are highly variable across countries and studies. This might be due to the lack of consensus regarding the definitional criteria of cyberbullying, the various measures used to determine cyberbullying engagement that are based on different definitional criteria and different time parameters for the occurrence of cyberbullying (e.g. last one year, six months, lifetime), and the criteria used to establish whether cyberbullying occurred (e.g. at least once or at least two or three times a month) (Kowalski et al., 2019). According to a review on the prevalence of cyberbullying in North America and in Europe (Brochado et al., 2017), cybervictimization rates ranged from 1.0% to 61.1%, cyberbullying perpetration rates ranged from 3.0% to 39.0%, whereas prevalence rates for being both a perpetrator and a victim of cyberbullying ranged from 1.5% to 72.0% between 2004 and 2014. According to the representative Health Behaviour in School-Aged Children (HBSC) surveys, in 2013/2014 11.7% of students from grades 5-11 were cybervictimized by receiving harmful or mocking messages, 5% of students from grades 5-11 were cybervictimized by

sharing humiliating pictures, 5% of students from grades 5-11 experienced both aforementioned types of cybervictimization. The HBSC 2017/2018 showed that 13.8% of students from 5-11 grades were cybervictimized once or twice, 2.1% of students reported a more frequent (weekly or more than once a week) cybervictimization. Regarding cyberbullying perpetration, 12.7% of students reported cyberbullying behaviour, 1.9% of students perpetrated cyberbullying on a regular basis (weekly or more than once a week, Várnai, 2019). So, the prevalence rates of cybervictimization showed an increase throughout the years in Europe and Hungary (see Table 1 and 2). Although, the aforementioned high variability in the measurement and the great heterogeneity in the prevalence rates limit the possible conclusions about the prevalence rates of cyberbullying engagement.

Table 1. Prevalence rates of cybervictimization in Europe

Countries participating in the study	Age of sample	Prevalence of cybervictimization	Reference
Portugal, Spain, France, Belgium, United Kingdom, Ireland, Italy, Germany, Denmark, Netherlands, Norway, Sweden, Finland, Estonia, Lithuania, Poland, Czech Republic, Austria, Slovenia, Hungary, Romania, Bulgaria, Turkey, Greece	9-16 years olds	7%	Livingstone et al., 2011
Belgium, Denmark, Italy, Ireland, Portugal, Romania, United Kingdom	11-16 years olds	12%	Livingstone et al., 2014
		Highest prevalence rates in Denmark (21%) and in Romania (19%) Lowest prevalence rates in Portugal (5%) and in Italy (6%)	
Spain, Poland, Netherlands, Romania, Iceland, Greece	14-17 years olds	21,4%	Tsitsika et al., 2015
		Highest prevalence rates in Romania (37,7%) and in Greece (26,8%) Lowest prevalence rates in Spain(13,3%) and in Iceland (13,5%)	

Table 2. Prevalence rates of cybervictimization in Hungary

Age of sample	Prevalence of cybervictimization	Reference
9-16 years olds	6%	Livingstone et al., 2011
11-17 years olds	13.4 %	Várnai & Zsíros, 2014
11-17 years olds	Once or twice: 13,8% On a regular basis: 2,1%	Várnai, 2019
12-13 and 16-17 years olds	40.5 %	Domonkos & Ujhelyi, 2014

1.3.4. Cyberbullying Roles.

Engagement in cyberbullying can happen in several ways. Adolescents can be involved in cyberbullying as perpetrators, victims, bully-victims, or bystanders. These cyberbullying roles tend to be fluid; adolescents usually are involved in several roles during cyberbullying situations (DeSmet et al., 2014; DeSmet et al., 2016; Van Cleemput et al., 2014). This fluidity of the roles can be a consequence of the Internet’s characteristics like anonymity and the hidden impact of cyberbullying on the victim (Moxey & Bussey, 2020). Just like the various forms of bystanders’ presence might also be a consequence of the Internet’s specific features as bystanders may be with the perpetrator when the cyberbullying act is carried out, with the victim when it is received, or with neither, just scrolling on the Internet and witnessing the cyberbullying incident (Smith, 2012). There are three forms of bystander behaviour that can be carried out during cyberbullying situations. First, bystanders can act as assistants, reinforcing the cyberbullying perpetrator. Second, bystanders also can remain passive and avoid involvement in the cyberbullying incident (Mazzone, 2020). At last, bystanders can intervene; this intervention can be both prosocial and antisocial in nature (Moxey & Bussey, 2020). Prosocial bystander behaviour includes constructive intervention targeted toward the victim or the bully e.g. by encouraging the cyberbullying perpetrator to apologize or by providing support or advice to the cybervictim (Cassidy et al., 2013; DeSmet et al., 2014; DeSmet et al., 2016; Moxey & Bussey, 2020). Whereas, when bystanders intervene aggressively, they respond aggressively to the perpetrator of the cyberbullying act e.g. by threatening him/her or by posting humiliating images online (DeSmet et al., 2014; DeSmet et al., 2016; Moxey & Bussey, 2020). Similarly to the cyberbullying roles, the different bystander roles are fluid as well, bystanders

might take multiple roles during cyberbullying incidents e.g. by taking the side of the cybervictim or of the cyberbullying perpetrator (DeSmet et al., 2014).

1.3.5. Antecedents of Cyberbullying Engagement.

Several studies have investigated the risk and protective factors that are associated with cybervictimization and cyberbullying perpetration. According to Kowalski and colleagues (2019) these factors can be categorized as individual, peer, family, school- and community-level risk and protective factors. Additionally, technology use also has a prominent role: Both cyberbullying perpetration and cybervictimization are related to heightened time spent online, engaging in risky online behaviours (e.g. sharing personal information, talking to strangers) and in online gaming (Chang et al., 2015; Hinduja & Patchin, 2008; Ybarra & Mitchell, 2004).

1.3.5.1. Individual Risk Factors of Cybervictimization

Early studies investigating cyberbullying were looking into the similarities and differences between traditional bullying and cyberbullying and aimed to explore whether the two types overlap. According to the results there is a link between traditional and cyberbullying involvement, youngsters who were victimized in traditional bullying are more likely to become victims of cyberbullying acts as well (Álvarez-García et al., 2015, Antoniadou et al., 2016; Chang et al., 2015). Further, early cyberbullying research (Dehue et al., 2008; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2006; Kowalski & Limber, 2007; Patchin & Hinduja, 2006; Williams & Guerra, 2007; Ybarra et al., 2007; Ybarra & Mitchell, 2008) was also investigating gender differences regarding cyberbullying. Some of these studies (Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2006; Patchin & Hinduja, 2006; Slonje & Smith, 2008; Smith et al., 2008; Smith et al., 2006; Williams & Guerra, 2007; Ybarra et al., 2007) have showed that girls are more likely to be cybervictimized. However, there were studies (Dehue et al., 2008; Kowalski & Limber, 2007; Ybarra et al., 2007; Ybarra & Mitchell, 2008) that found no significant gender differences in cybervictimization. Therefore, the existing evidence is quite inconsistent about the gender differences.

There are stigmatizing factors that can also be considered as significant individual factors that enhance the chance of cybervictimization (Kowalski et al., 2019). Such a factor can be if youngsters belong to sexual minority groups as LGBT youth report higher rates of cybervictimization compared to their heterosexual peers (Elipe et al., 2018; Garaigordobil et al., 2020). Little research have examined so far whether disability or developmental disorders

are increasing the risk of cybervictimization. Though according to the existing results students with ADHD are more likely to be cybervictimized (Heiman et al., 2015), whereas girls with a disability or chronic health condition were more likely to become cyber bully-victims (Beckman et al., 2016). At last, physical characteristics, like obesity also seem to increase the possibility of cybervictimization (Kenny et al., 2017).

Individual risk factors include psychological factors as well. Several studies have investigated the role of self-esteem in cybervictimization. Based on the results, low self-esteem seems to be a prominent factor in cybervictimization (Álvarez-García et al., 2015; Bayraktar et al., 2015; Brewer & Kerslake, 2015). Further, victims of cyberbullying also seem to have difficulties in their social environment and peer relationships. Youngsters suffering from social anxiety are more likely to be cybervictimized (Navarro et al., 2012). Moreover, cybervictims also show difficulties regarding their social skills; they have lower levels of social intelligence and tend to have problems empathizing with others in need and taking others' perspective (Bayraktar et al., 2015; Navarro et al., 2012; Schultze-Krumbholtz & Scheitauer, 2009; Schultze-Krumbholtz & Scheitauer, 2013; Wong et al., 2014). At last, cybervictims also have issues regarding self-regulation. Evidence showed that cybervictims lack self-control (Antoniadou et al., 2016) and they also demonstrated problems with regulating their anger (İçellioğlu & Özden, 2014).

1.3.5.2. Social risk factors of cybervictimization

Social risk factors of cybervictimization include family, peer, and school- and community-level factors (Kowalski et al., 2019). The *family* plays a crucial role in children's development, as well as has a prominent influence on their cyberbullying involvement. Youngsters who lack parental warmth and support from their family are more at risk of cybervictimization (Fanti et al., 2012; Fridh et al., 2015; Kowalski et al., 2014; Martins et al., 2016; Williams & Guerra, 2007). Other characteristics of the family like communication among the family members also have an influence on cybervictimization. Offensive and avoidant family communication (Buelga et al., 2017; Buelga et al., 2016; Elgar et al., 2014; Larranga, et al., 2016) endangers youngsters to become victims of cyberbullying. Further, the characteristics of family relationships and the emotional link among the family members also play role in cybervictimization. Conflictual family relationships and lack of emotional link among the family members are risk factors of cybervictimization (Ortega-Barón et al., 2016). Previous research have also studied the effect of the *peer* context in cybervictimization: Adolescents lacking supporting peer relationships are more likely to become victims of cyberbullying

(Baldry et al., 2015; Fridh et al., 2015; Kowalski et al., 2014). Additionally, the school environment and climate also influence cyberbullying among students. Feeling unsafe in the school heightens the risk of cybervictimization (Bottino et al., 2015).

Based on previously found predictors of cybervictimization, Guo (2016) drew the general profile of cybervictims. According to this profile, cybervictims are usually females, more active on the Internet and victims of traditional bullying. They show high levels of depression, helplessness, stress, and/or loneliness. They tend to bully others offline and show several problem behaviours, positive attitude toward aggression. They are characterized by antisocial personality traits and have low levels of self-satisfaction, self-concept, or self-esteem. Furthermore, cybervictims are treated negatively by family members and peers as well, and have low levels of school commitment (Guo, 2016).

1.3.5.3. Individual protective factors against cybervictimization

Youngsters who spend less time online and with smart devices are less likely to be cybervictimized (Zych et al., 2019). Furthermore, there are also psychological factors that are protective against cybervictimization. High self-esteem and a good self-concept decrease the chance of cybervictimization (Chen et al., 2017; Kowalski et al., 2014; Tsaousis, 2016). Youngsters who have adaptive and effective social skills that help them to form and maintain peer relationships, peacefully resolve conflicts, and adapt to the peer group are also less likely to be cybervictimized. Such adaptive and effective social skills include social intelligence, empathy, emotion regulation strategies, and self-efficacy in defending oneself (Chen et al., 2017; Kowalski et al., 2014). Frequent prosocial behaviour that is based on the aforementioned socio-emotional skills is also a protective factor against cybervictimization (Kowalski et al., 2014).

1.3.5.4. Social protective factors against cybervictimization

Factors from the family, peer and school level can serve as protective against cybervictimization. Family variables, like warm relationship with the parents (Elsaesser et al., 2017), positive family environment (Cook et al., 2010; Guo, 2016), parental involvement and communication (Lereya et al., 2013) decrease the likeliness of cybervictimization. The characteristics of digital parenting also play a role in preventing cybervictimization. Some studies have found that parental rules and supervision regarding adolescents' online activities, as well as monitoring of such activities may also as protective factors that decrease the chance

of being cybervictimized (Baldry et al., 2015; Chen et al., 2017; Kowalski et al., 2014). On the contrary, other studies (Elsaesser et al., 2017) showed that collaborative digital parenting, e.g. co-use and evaluative mediation, protect more likely against cybervictimization. All in all, the effect of digital parenting on cyberbullying engagement seems to be inconclusive so far. Besides the family environment, the peer group and peer relations also can prevent cybervictimization. Youngsters who experience support and warmth in their peer relationships and friendships are less likely to be cybervictimized (Fridh et al., 2015). On the school-level, school safety, positive school climate (Kowalski et al., 2014, Zych et al., 2019) and close relationship with teachers (Ortega-Barón et al., 2016) seem to be protective factors against cybervictimization.

1.3.5.5. Individual risk factors of cyberbullying perpetration

Similarly to cybervictimization, previous traditional bullying experience can be a risk in cyberbullying perpetration as well. Adolescents who perpetrated traditional bullying are more likely to become cyberbullying perpetrators (Baldry, Farrington, & Sorrentino, 2015; Kowalski et al., 2012). Furthermore, victims of traditional bullying might also become cyberbullying perpetrators (Antoniadou et al., 2016; Guo, 2016; Vazsonyi et al., 2012) as the Internet can serve as means of revenge and retaliatory aggression (Beran & Li, 2007). On the contrary, Kowalski and colleagues (2012) have found that traditional bullying victimization does not contribute to cybervictimization. Summing up the results so far, the results show that traditional bullying perpetration increases the probability of cyberbullying perpetration, but the relationship between traditional bullying victimization and cyberbullying perpetration is not yet clearly confirmed. The results about the association between gender and cyberbullying perpetration are also similarly inconclusive as the results regarding cybervictimization. According to some studies there is no association between gender and cyberbullying perpetration (Dehue et al., 2008; Kowalski & Limber, 2007; Ybarra et al., 2007; Ybarra & Mitchell, 2008), whereas others have showed that boys are more likely to engage in cyberbullying as perpetrators (Erdur-Baker, 2009; Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2006; Patchin & Hinduja, 2006; Williams & Guerra, 2007; Ybarra et al., 2007).

Various individual *psychological* factors were studied in relation to cyberbullying perpetration so far. First of all, there have been studies investigating the role of trait-like and personality factors in cyberbullying perpetration. According to the results, youngsters with lower self-esteem are prone to become cyberbullying perpetrators (Baldry et al., 2015). Further, dark-side

personality traits also increase the risk of becoming cyberbullying perpetrator. Youngsters who show narcissistic personality traits are more likely to perpetrate cyberbullying (Chen et al., 2017). As do adolescents who are characterized by Machiavellian and psychopathic traits (Peterson & Densley, 2017). Similar to cybervictims, cyberbullying perpetrators also show difficulties regarding social and emotional skills. Youngsters who struggle with empathizing with others' emotional states and/or with taking others' perspective (Baldry et al., 2015; Brewer & Kerslake, 2015; Del Rey et al., 2015), i.e. have lower levels of affective and/or cognitive empathy, are more at risk to become cyberbullying perpetrators. Self-regulation is also important in peer relationships, so youngsters are able to resolve conflicts peacefully and maintain the important relationships (Eisenberg & Fabes, 1992; Gross & John, 2003; Robertson et al., 2012). If youngsters are impulsive and have problems with self-control, they are more likely to perpetrate cyberbullying (Antoniadou et al., 2016; Baldry et al., 2015; Lianos & McGrath, 2017). Internalizing and externalizing problems also increase the risk of perpetrating cyberbullying (Guo, 2016; Marciano et al., 2020). At last, previous studies have found the use of moral disengagement strategies to be a prominent factor in cyberbullying perpetration. Cyberbullies tend to use these cognitive strategies to justify their online aggressive acts e.g. by distorting the consequences of the cyberbullying act (Bussey et al., 2015; Renati, et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016).

1.3.5.6. Social risk factors of cyberbullying perpetration

Similarly to the social risk factors of cybervictimization, social risk factors of cyberbullying perpetration include family, peer, and school-and community-level factors (Kowalski et al., 2019). Similarly to cybervictimization, negative and conflictual *family* environment is a risk factor in cyberbullying perpetration: Negative, offensive and avoidant communication (Buelga et al., 2017; Buelga et al., 2016; Elgar et al., 2014; Larranga, et al., 2016) and negative, conflictual relationships among the family members (Buelga et al., 2017; Hemphill & Heerde, 2014; Ybarra & Mitchell, 2004) increase the chance of adolescents' cyberbullying perpetration. Further, if youngsters perceive poor support from their family they are also more at risk of cyberbullying perpetration (Calvete et al., 2010; Fanti et al., 2012; Solecki et al., 2014; Wang et al., 2009). The *peer* group, peer relationships and peer reactions are especially important for youngsters (Neufeld & Máté, 2006). Exclusion from the peer group (Baldry et al., 2015) and rejection by the peers (Bayraktar et al., 2015) is also associated with cyberbullying perpetration. However, we do not know the causal relations: Whether they became cyberbullying perpetrators because they were marginalized in the peer group or whether the rejection and

exclusion is a consequence of their aggressive behaviours? Besides the peer factors, the school environment and climate are also related to the students' cyberbullying perpetration. If youngsters experience low support from their teachers and a negative school climate, it increases the risk of cyberbullying perpetration among the students in the school. Further, if the school lacks rules regarding cyber safety and cyberbullying policy, it also increases the risk of higher frequency of cyberbullying perpetration in the school (Baldry et al., 2015; Guo, 2016).

Based on the aforementioned predictors of cybervictimization, Guo (2016) drew the general profile of cyberbullying perpetrators. According to this profile, cyberbullying perpetrators are usually older males, more active online and perpetrators or victims of traditional bullying. They show behavioural and internalizing problems and a positive attitude toward violence. Cyberbullying perpetrators also have antisocial personality traits, lack moral values and empathic skills. Further, they have poor peer and family relationships, and report a negative school climate (Guo, 2016).

1.3.5.7. Individual protective factor against cyberbullying perpetration

Similarly to cybervictimization, if youngsters spend little time online and with using ICT devices, they are less likely to be involved in cyberbullying as perpetrators (Zych et al., 2019). There are also certain personality and trait-like factors that are associated with lower rates of cyberbullying perpetration. If youngsters are characterized by agreeableness (van Geel et al., 2017), they are less likely to perpetrate cyberbullying. Also, high self-esteem seems to be related to lower frequency of cyberbullying perpetration (Chen et al., 2017; Kowalski et al., 2014; Tsaoasis, 2016). Socio-emotional skills also play an important role in engaging in positive and peaceful peer interactions online. If youngsters have sensitive empathic skills (Kowalski et al., 2014; Zych et al., 2019) and are able to manage their emotions adaptively in social situations (Chen et al., 2017) they are less likely to engage in cyberbullying as perpetrators.

1.3.5.8. Social protective factors against cyberbullying perpetration

Family, peer and school-related factors all can be protective against cyberbullying perpetration. A positive and supporting family environment serves as a base for healthy development and also protects against risk behaviours, such as cyberbullying perpetration. Indeed, secure attachment, trust among the family members and emotional support from the family decrease the chance of cyberbullying perpetration (Bayraktar et al., 2015; Cook et al., 2010; Elsaesser et

al., 2017; Fanti et al., 2012; Guo, 2016; Wang et al., 2009). Further, digital parenting strategies also influence youngsters' cyberbullying engagement. Studies have found that parental monitoring is associated with lower frequency of cyberbullying perpetration (Mesch, 2009). Peer-related factors can also serve as protective factors against cyberbullying perpetration. Such factors can be positive peer influence (Cook et al., 2010; Guo, 2016) and peer support (Heerde & Hemphill, 2018; Kowalski et al., 2014), so if youngsters are part of a supporting peer group and have positive peer experiences, they are less likely to perpetrate cyberbullying. Alongside the peer variables, school-related factors are also associated with cyberbullying perpetrations. If youngsters perceive their school as a safe environment, the frequency of cyberbullying perpetration is lower (Baldry et al., 2015; Bottino et al., 2015).

1.3.6. Consequences of Cyberbullying Engagement.

Several studies investigated the possible consequences and negative influence of cyberbullying engagement for both victims and perpetrators (Kowalski et al., 2019). The outcomes of cyberbullying involvement can affect four areas in adolescents' lives: psychological health, physical health, social functioning, and behaviour (Kowalski et al., 2014). Regarding *psychological health*, the victims of cyberbullying experience negative affective states as a consequence of cyberbullying incidents (Alhujaili et al., 2020), i.e. they feel angry, anxious, afraid, and ashamed (Ortega et al., 2012). Both cyberbullying perpetrators and cybervictims may suffer from symptoms of anxiety and depression (Didden et al., 2009; Perren et al., 2010; Skilbred-Fjeld et al., 2020; Ybarra & Mitchell, 2004), and suicidal ideations (Hinduja & Patchin, 2010; Schenk & Fremouw, 2012). Further, both cyberbullying perpetrators and cybervictims are characterized by low self-esteem (Didden et al., 2009) and low self-control (Vazsonyi et al., 2012). Regarding *physical health*, both cyberbullying perpetrators and cybervictims have poor physical health (Kowalski & Limber, 2013), and there is an increased risk of self-injury for them (Schneider et al., 2012). Further, cybervictims might experience psychosomatic symptoms, as well (Kowalski et al., 2014). The *social lives* of both cyberbullying perpetrators' and cybervictims' get impaired because of cyberbullying involvement therefore they report higher levels of loneliness (Sahin, 2012a). The *behavioural* consequences of cyberbullying involvement for both perpetrators and victims might be substance (i.e. tobacco, alcohol, or drug) use (Ybarra & Mitchell, 2004), truancy, absence from school, poor academic performance, decreased concentration, and trespassing behaviours (e.g. weapon carrying) (Beran & Li, 2005, 2007; Vazsonyi et al., 2012; Ybarra et al., 2007).

Additionally, cybervictims report reduced levels of prosocial behaviour, as well (Kowalski et al., 2014).

1.3.7. Prevention and Intervention Programs against Cyberbullying in Hungary

There are only a few programs and organizations targeting cyberbullying in Hungary. These programs are only lesson plans about specific types of cyberbullying or not even lesson plans but one educational lesson on cyberbullying. These lesson plans lack any theoretical background like the whole-school approach of Olweus's intervention program, the SEL approach of ENABLE, or the mentalizing social systems theory of the Peaceful Schools. Most of the existing programs are mainly targeting safe Internet use: The *Safer Internet Program* concentrates on safe internet use, includes lesson plans (*Web We Want*) about rights on the Internet, fake news, self presentation on social media, etc. The *Hegyvidéki Onvédelem Program* trains peer mentors who help youngsters to use the smart devices safely and consciously. Furthermore, the Hungarian government also has a program, i.e. *Child Protection Online* that covers safe Internet use and offers a hotline for cyberbullying incidents. The *TABBY Project* was a specifically cyberbullying oriented program, its aim was to research and prevent cyberbullying. However, the program is not active anymore, only the manual for educators and the videos for the lessons are available but there are no more trainings (Jármi, 2019). Another cyberbullying specific program is Kék Vonal's lesson plan about sexual cyberbullying. The lesson plans' objective is to educate youngsters about sexual cyberbullying in a safe environment where they also can learn about where and how to ask for help (Táler & Rimóczi, n.d.). Kék Vonal also has a lesson plan for adolescents targeting general Internet usage that includes one lesson about cyberbullying (Baranyai & Reményiné, 2019). With the support of the Hungarian Educational Authority an online prevention project against cyberbullying, i.e. *Online against Cyberbullying* was developed by three professionals as an answer to the challenges of distance learning. The project includes three lesson plans: for primary school students in grades 1-4, for primary school students in grads 5-8, and for high school students. Furthermore, there is also a database of lesson plans, videos, activities that educators and school personnel can use when targeting cyberbullying.

1.4. Aim of the Studies

Research regarding cyberbullying is still in the early phase in Hungary. Only a handful of studies (Domonkos & Ujhelyi, 2014; Várnai, 2019; Várnai et al., 2018; Várnai & Zsíros, 2014; Zsila et al., 2018; Zsila et al., 2019a; Zsila et al., 2019b) aimed to discover the frequency and

the correlates of cyberbullying among Hungarian adolescents. On the other hand, there are several international studies researching the nature of cyberbullying, the differences between cyberbullying and traditional bullying, and the antecedents and consequences of cyberbullying. Still, researchers have not reached a consensus on the defining criteria of cyberbullying. There is no common understanding among researchers on from what frequency, seriousness or some other criteria do online aggressive acts count as cyberbullying acts. Different studies use different criteria resulting in various, inconsistent results about cyberbullying. The solution of this debate is not the aim of this doctoral thesis, but this overall limitation of cyberbullying research is important to help the understanding of our research results.

Another limitation of the existing research about cyberbullying is that with the mostly cross-sectional studies there is not much information about causal relationships between cyberbullying and the antecedents/consequences. For example, low self-esteem was found to be a risk factor of cyberbullying engagement (Álvarez-García et al., 2015; Baldry et al., 2015; Bayraktar et al., 2015; Brewer & Kerslake, 2015) and also as a consequence of cyberbullying involvement (Didden et al., 2009). However, because of the cross-sectional nature of the studies, we do not know any information about the temporal sequence of cyberbullying incidents, i.e. what happened first the cyberbullying incident or the lower self-esteem. This circular causality is common in almost all the previously discussed antecedent variables and consequences.

If further comparing the existing knowledge about traditional bullying and cyberbullying, one can see that there are comprehensive theories (e.g. mentalizing social systems theory, SEL, etc.) about the dynamics behind traditional bullying that prevention and intervention programs could have been built on. However, there is no such synthesized and comprehensive theory about the dynamics of cyberbullying. Consequently, the aim of my doctoral studies was to discover possible variables that can help to explore which factors may be part of a comprehensive theory or whether already existing traditional bullying theories and variables from these (e.g. SEL, Bronfenbrenner's theory, 1989) could help the understanding of the dynamics of cyberbullying. Research about such factors may help to find a focus for not only theory building processes but also for prevention and intervention program developers as well. Thus, during my doctoral studies I aimed to include developmentally relevant factors and, as mentioned earlier, factors from already existing traditional bullying theories. So, the aim of my doctoral studies was to understand the role of socio-emotional skills (e.g. empathy, emotion regulation), moral development (e.g. prosocial moral reasoning, moral disengagement), and social factors (family

functioning, perceived social support) in adolescents' cyberbullying engagement and cyber bystander behaviour.

In the first study, our aim was to adapt internationally accepted questionnaires, i.e. Cyber Victim and Bullying Scale (Cetin et al., 2011) and European Cyberbullying Intervention Project Questionnaire (Del Rey et al., 2015), that allowed to conduct further research of cyberbullying engagement in Hungary. Further, we aimed to analyse the factor structure, reliability, and validity of the two questionnaires, as well as to compare them based on these psychometrical, as well as on theoretical characteristics showing the questionnaires' advantages and disadvantages.

The second study happened after the validation of Cyber Victim and Bullying Scale and before the validation of the European Cyberbullying Intervention Project Questionnaire. The goal of the study was to examine the associations between cyberbullying and socio-emotional skills to explore whether SEL might be a working theory in cyberbullying. Thus, the effects of empathy, emotion regulation, and moral disengagement were explored during this study. Our aim was to clarify the inconsistent results regarding cybervictims' empathic skills. Another aim was to explore the role of moral disengagement in cyberbullying engagement and its relations to empathy and emotion regulation in cyberbullying engagement. At last, we examined the specific maladaptive emotion regulation strategies that might play a role in cybervictimization.

In the third study, not only socio-emotional factors were included but also social factors as they are relevant from a developmental viewpoint (e.g. Bronfenbrenner's theory [1989]). So, our aim was to explore the direct and indirect effects of social environment and emotion regulation difficulties on adolescents' cyberbullying involvement. We tested models of cyberbullying perpetration and cybervictimization, to analyse how the social factors, i.e. family functioning and perceived social support from family and friends affect cyberbullying engagement. We examined these social factors' direct effects, as well as their indirect effects through emotion regulation difficulties on cyberbullying perpetration and cybervictimization.

The fourth study was also planned based on a developmental viewpoint: Our previous results showed the importance of moral disengagement, thus the aspects of prosocial moral development (Eisenberg et al., 1991) were also included besides the socio-emotional skills. The social desirability was included as a social factor, measuring the pressure to conform the peers' beliefs, feelings, attitudes, etc. Moreover, not only cyberbullying engagement was studied but also factors influencing bystanders' reactions. The aim of the study twofold: First, our aim was

to explore the role of prosocial moral reasoning, moral disengagement, social desirability, emotion regulation, and empathy in cyber bystanders' reactions, i.e. antisocial, prosocial, and ignoring reactions. Second, another goal of the study was to explore how moral development, moral disengagement, emotion regulation, and empathy differentiate among the different cyberbullying roles, i.e. cyberbullying perpetrator, cybervictim, bully-victim, and outsider.

2. FIRST STUDY - HUNGARIAN ADAPTATION OF THE CYBER VICTIM AND BULLYING SCALE (CVBS) AND THE EUROPEAN CYBERBULLYING INTERVENTION PROJECT QUESTIONNAIRE (ECIPQ)¹

2.1. Introduction

The prevalence of cybervictimization shows increase not just in Central, South, and Western Europe but in Hungary as well (see Tables 1 and 2). Thus, cyberbullying is becoming a pressing issue for the Hungarian educational system, teachers, students, and parents; therefore, research is needed to understand the dynamics of cyberbullying engagement and for the development of efficient prevention and intervention programs. Only a few studies were conducted in Hungary, so far, to explore the antecedents and consequences of cyberbullying engagement (Domonkos & Ujhelyi, 2014; Várnai, 2019; Várnai et al., 2018; Várnai & Zsíros, 2014; Zsila et al., 2018; Zsila et al., 2019a; Zsila et al., 2019b). The previous Hungarian studies have used single-item measurement (Várnai, 2019; Zsila et al., 2019a; Zsila et al. 2019b) or single-item measurement completed by two items measuring specific cyberbullying behaviours (Zsila et al., 2018). Although the single-item measurements have some limitations compared to multi-item ones, e.g. measuring lower frequency of cyberbullying engagement (Gradinger et al., 2010). Therefore, our aim was to adapt multi-item questionnaires that might contribute to more research regarding cyberbullying in Hungary.

As it was previously introduced (see part 1.3.1.), there are several various definitions that make an attempt to describe the phenomenon of cyberbullying. These definitions partly include Olweus' (1994b) traditional bullying criteria (i.e. power imbalance, intentionality, and repetition) and the specific characteristics of cyberbullying (i.e. anonymity, 24/7 nature, and broad audience, Casas et al., 2013; Cetin et al., 2011; Hinduya & Patchin, 2008; Kowalski & Limber, 2007; Kwan & Skoric, 2013). All of the existing questionnaires measuring cyberbullying involvement are based on different definitional criteria, thus missing one or more components of the definitions (Kowalski et al. 2014). Further, the questionnaires also differ in the timeframe used to determine cyberbullying involvement (e.g. lifetime, last 6 months, or last year) and the frequency rate used to classify a person as a perpetrator, victim, bully-victim, or

¹ This subchapter is based on the following publication: *Arató N., Zsidó A. N., Lénárd K., & Lábadi B. (2019). Az Internetes Zaklatás Áldozat és Elkövetője Kérdőív (CVBS-HU) és az Európai Cyberbullying Intervenció Projekt Kérdőív (ECIPQ) magyar adaptációja. Iskolakultúra: Pedagógusok Szakmai – Tudományos Folyóirata, 29(12), 81-110.*

outsider (e.g. at least once, one or two times a month, or several times a week) (Kowalski et al., 2014; Kowalski et al., 2019). Moreover, there is no consensus among the researchers about an appropriate cut off score to identify cyberbullying involvement. If ‘repetition’ is an important defining criteria of cyberbullying then the cut off score for cyberbullying engagement should be ‘*at least two or three times a month*’, with this frequent bullies can be identified (Gradinger et al, 2010). However, if we think about the nature of cyberbullying, even one cyberbullying act can be severe and have serious impact, knowing this the ‘*at least once*’ frequency should be used as cut off score. Although, with this method only occasional bullies can be identified as well (Dooley et al., 2009; Gradinger et al., 2010). There has been no study so far that would have determined what cut off score would be the most effective, no study explored what is more frequent cyberbullies who act aggressively only once or cyberbullies who repeat their acts at least two or three times a month (Gradinger et al, 2010). To avoid the debate around the frequency-based cut off score, the items’ sum and average can also be used, although only in multi-item measures, this way the random error might be reduced as well (Kowalski et al., 2014). Based on Várnai and colleagues’s results (2018), even the severity should be considered when thinking about the identification of cyberbullying incidents. However, questionnaires usually use answer scales measuring the frequency of cyberbullying engagement.

There are two types of cyberbullying measures existing: single-item measurements and multi-item checklists (Kowalski et al., 2014). Many single-item measures include the definition of cyberbullying and participants are asked how often they have experienced or performed the described behaviour (Hinduja & Patchin, 2008; Mesch, 2009; Williams & Guerra, 2007; Wolak et al., 2003). Whereas, multiple-item measures contain a checklist of behaviours that are considered as cyberbullying acts and participants are asked to indicate how often they have experienced or performed these behaviours (Álvarez-García et al., 2016, 2017; Del Rey et al., 2015). Both types of measurements have advantages and limitations. Single-item measures might be advantageous because they can be practical, fast to be administered, and cost-efficient (Solberg & Olweus, 2003). Further, it can be easier to decide what cut off score to use that also can make comparison of different cyberbullying frequencies easier (Gradinger et al, 2010). On the other hand, single-item measures are less reliable (Berne et al., 2013): Single item measurements assume that respondents know what cyberbullying is, but behaviours that are considered as negative acts (= cyberbullying) can differ in the different age groups (Gradinger et al, 2010). Further, because of the cultural differences the terms used in the single-item measurements depend on the language and the terms used can have different meanings in

different languages (Smith et al., 2002). Further, participants might be less likely to indicate their engagement in cyberbullying acts on one global item compared to a scale where several behaviours are mentioned. This is one advantage of multiple-item questionnaires, that participants are more likely to indicate their involvement where there are several behaviours listed from they can choose (Ybarra et al., 2012). Additionally, multi-item questionnaires are more reliable (Murphy & Davidshofer, 2005) and the sum or average of the items can be used as well (Kowalski et al., 2014). A key limitation of these measures is that not all cyberbullying behaviours are included in each measure and the behaviours included might differ from one another in severity, thus the summing of the items might be challenging (Kowalski et al., 2014). Another limitation is that the specific behaviours covered in multi-item questionnaires may not fit the definitional criteria of cyberbullying (Gradinger et al., 2010). Additionally, the identification of cyberbullies, cybervictims, and bully-victims can be assessed in several different ways (as describe above) that may result in different incomparable frequency data regarding cyberbullying engagement (Solberg & Olweus, 2003). On the contrary of these limitations, multiple-item measures seem to assess the frequency of cyberbullying better because even if students do not understand the global nature of cyberbullying, they can be more familiar with the specific behaviours described by the items. Thus, they are able to indicate their engagement in cyberbullying more precisely (Gradinger et al., 2010).

Based on the information and issues regarding cyberbullying instruments pointed out by previous research, Berne and colleagues (2013) summarized eight points to consider that can help to decide which instrument is adequate for research purposes. (a) They proposed that *single-item measures* should be avoided because these instruments are less reliable, lack scope and cannot be used to uncover details (Farrington, 1993; Smith et al., 2004). Further, they cannot distinguish between moderate and large differences and fine degrees of an attribute (Griezel et al., 2008). (b) It is important to consider the *underlying concept and definitional criteria* of cyberbullying included in the instrument (e.g. how many and which ones of the definitional criteria is included). (c) Various types of *devices and/or media* are included in the instruments; the two most frequent ones are mobile phones and e-mail. Although, there is an ongoing and rapid technological advancement, therefore the consideration of media and/or device included in the instrument is crucial. (d) Most of the existing instruments are adapted and psychometrically analysed on adolescent *sample*, there is little information on cyberbullying and cyberbullying instruments among adults (e) The *subscales* of the instruments should be based on statistical analysis (e.g. factor analysis), not only made up by theoretical

grouping without statistical analysis. (f) The *self-administered nature* of the instruments might be a disadvantage, as respondents might underreport their involvement in cyberbullying because of social desirability or the moral issues regarding cyberbullying. On the other hand, self-administered measures have many advantages as well, e.g. large amount of data in short time, quick and simple administration. (g) There is little longitudinal research regarding cyberbullying thus *test-retest reliability* is often missing regarding cyberbullying instruments. Further, half the existing measures lack *internal reliability* testing as well. (h) The last point is *validity*: The validity tests also are often missing or only the convergent validity is analysed (Berne et al., 2013).

As a part of the psychometric analyses, the convergent and divergent validity of the measurements has to be tested as well: Therefore, based on previous studies' results some significant individual and social factors were selected for the validity testing of the chosen cyberbullying questionnaires. To test convergent validity of the cyberbullying scale, the anger expression style, i.e. an individual factor, was used as previous studies have found a strong positive association between anger expression style and cyberbullying perpetration (Aricak & Ozbay, 2016; İcellioğlu és Özden, 2014). Another significant individual factor in cyberbullying engagement is empathy. As cyberbullying perpetrators showed lack of empathic skills in previous research (Ang & Gogh, 2010; Brewer & Kerslake, 2015; Del Rey et al., 2016; Steffgen et al., 2009, 2011), it can be a factor to test the convergent validity of the cyberbullying perpetration scale. Both cyberbullying perpetrators and cybervictims are characterized by externalizing (Garaigordobil & Machimbarrena, 2019; Guo, 2016; Hinduja & Patchin, 2007) and internalizing problems (Bonanno & Hymel, 2013; Garaigordobil & Machimbarrena, 2019; Guo, 2016; Patchin & Hinduja, 2010). Thus, externalizing and internalizing problems can be used to test convergent validity of both cyberbullying perpetration and cybervictimization scales. Social factors in cyberbullying engagement include family, peer and school factors. Lack of social support from family increases the risk of both cyberbullying perpetration (Calvete et al., 2010; Fanti et al., 2012; Solecki et al., 2014; Wang et al., 2009) and cybervictimization (Fanti et al., 2012; Fridh et al., 2015; Kowalski et al., 2014; Martins et al., 2016; Williams & Guerra, 2007). Furthermore lack of social support from peers also increases the likelihood of both cyberbullying perpetration (Baldry et al., 2015; Bayraktar et al., 2015; Calvete et al., 2010; Fanti et al., 2012; Heerde & Hemphill, 2018) and cybervictimization (Baldry et al., 2015; Fridh et al., 2015; Kowalski et al., 2014; Williams & Guerra, 2007). Therefore, perceived social support from family and peers can be used to test the scales'

divergent validity. Another social factor is school climate that has been found to be reported as negative by both cyberbullying perpetrators and cybervictims (Benders, 2012; Hinduja & Patchin, 2010). Thus, school climate is convenient to test divergent validity of both cyberbullying and cybervictimization scales.

Based on the aforementioned points and literature, the aim of our study was to adapt internationally accepted questionnaires and to conduct the psychometric analyses of these measures on samples of Hungarian adolescents to explore whether they can be used in Hungarian research as well. We adapted two questionnaires, the Cyber Victim and Bullying Scale (Cetin et al., 2011) and the European Cyberbullying Intervention Project Questionnaire (Del Rey et al., 2015); the psychometric properties of these two measures will be introduced in the following two studies.

2.2. Hungarian Adaptation of the Cyber Victim and Bullying Scale (CVBS)

Firstly, the Hungarian version of the Cyber Victim and Bullying Scale (CVBS, Cetin et al., 2011, see Appendix 1) was adapted for psychometric analyses. The questionnaire was chosen based on its specific characteristics. The measure has three subscales that cover different types of cyberbullying behaviour (e.g. verbal cyberbullying, use of fake profiles, and sexual cyberbullying), by using these subscales different types of cyberbullying perpetration and cybervictimization can be associated with individual and social antecedents and consequences of cyberbullying. Developers of the CVBS included two criteria of traditional bullying in their instrument that are intentionality and power imbalance (e.g. *“Hacking someone’s private webpage without permission”*), further one criteria of cyberbullying that is anonymity. In the instrument the device type that is used for cyberbullying is only the Internet, cyberbullying via mobile phone is not included. The questionnaire is assessing both cyberbullying perpetration and cybervictimization in adolescent population (age range = 14-19) with the three aforementioned subscales.

The internal consistency of two subscales of the Cyber Bullying Scale that are Verbal Cyber Bullying and Cyber Forgery was excellent (Cronbach’s $\alpha = .81$ and Cronbach’s $\alpha = .83$, respectively). Whereas, the internal consistency of the third subscale of the Cyber Bullying Scale, that is Hiding Identity was lower (Cronbach’s $\alpha = .69$). The internal consistency of two subscales of Cyber Victim Scale, that are Victim of Verbal Cyber Bullying and Victim of Cyber Forgery was excellent (Cronbach’s $\alpha = .80$ and Cronbach’s $\alpha = .86$, respectively). Similarly to the Cyber Bullying Scale, the internal consistency of the third subscale of the Cyber Victim

Scale, that is Victim of Hiding Identity, was lower (Cronbach's $\alpha = .68$). According to the confirmatory factor analyses, for both the Cyber Bullying Scale and Cyber Victim Scale the three factor models show a good fit (Cetin et al., 2011).

2.2.1. Method.

2.2.1.1. Participants.

Six hundred and thirty-two high school students (261 boys and 371 girls), aged between 14 and 19 years (mean age = 16.47, SD = 1.47) participated in the study. The whole sample was used to the confirmatory factor analyses and to the internal consistency testing. A smaller part of this sample, consisting of 120 students (71 boys and 49 girls), aged between 16 and 20 years (mean age = 17.51, SD = 0.72) was used for the validity testing.

2.2.1.2. Materials.

The Cyber Victim and Bullying Scale (Cetin et al., 2011, see Appendix 1) measures both cyberbullying perpetration and cybervictimization with 22 items. The Scale of Cyber Bullying has three subscales: cyber verbal bullying, hiding identity and cyber forgery. The Scale of the Cyber Victim has the same three subscales reworded to measure cybervictimization. Participants answered on a five-point scale (1 = never, 2 = rarely, 3 = occasionally, 4 = frequently, 5 = always) to indicate how often they engaged in cyberbullying activities or became victims of it in the last one year.

The Interpersonal Reactivity Index (Davis, 1983 trans. Kulcsár, 1998, see Appendix 2) measures empathy with 28 items. The scale has four subscales: Fantasy (Cronbach's $\alpha = .81$), Empathic Concern (Cronbach's $\alpha = .74$), Perspective Taking (Cronbach's $\alpha = .71$), and Personal Distress (Cronbach's $\alpha = .53$). Participants answered on a five-point scale (0 = does not describe me well; 4 = describes me very well) to indicate how much the items describe their thoughts and feelings in a variety of situations.

The Spielberger Anger Expression Scale (Spielberger, 1985 trans. Oláh, 1987, see Appendix 3) measures individual differences in anger expression and control with 20 items. It contains of two subscales, that are Anger/In (Cronbach's $\alpha = .65$) and Anger/Out (Cronbach's $\alpha = .79$). The participants had to indicate on a four-point scale how strongly the items describe their feelings and acts when they are angry.

To measure school climate, Twemlow and Sacco's (2012) questions were used (Cronbach's $\alpha = .80$), that are used to assess school climate in schools that participate the Peaceful Schools Programs. The questions are related to the social climate in the school, competitiveness in school, and the relationship with the teachers. Participants answered on a five-point Likert-scale (1 = does not describe my school well; 5 = describes my school very well) to indicate how much the items describe their school environment (see Appendix 4).

2.2.1.3. Procedure.

After the ethical approval in conducting this study was granted from the Hungarian United Ethical Review Committee for Research in Psychology (reference number: 2017-27), we reached out to several schools with our research proposal. When the school principals agreed to participate in the study, parents' consent were asked about their children's participation. After, both parents and students agreed to the participation, the students completed the questionnaires by paper-pencil during school hours supervised by their teachers or the research's leader.

2.2.1.4. Statistical Analyses.

Confirmatory factor analyses were used to test whether the original factor structure can be used in the Hungarian version of the two scales (Scale of Cyber Bullying and Scale of Cyber Victim). According to Hu & Bentler (1999), the following criteria were used for the fitting indices: $\chi^2/df < 2$, RMSEA $< .06$, NFI $> .95$, TLI $> .95$, CFI $> .95$. Further, we used reliability analyses to test the internal consistency of the two scales and the subscales as well. The data showed non normal distribution, therefore non parametric tests were used to test the criterion validity of the scales. We tested the relationships among cyberbullying perpetration, cybervictimization, age, empathy, anger expression style, and school climate with Spearman's rank-order correlation. Additionally, to explore the gender differences in cyberbullying perpetration and cybervictimization Mann-Whitney U test was used.

2.2.2. Results.

2.2.2.1. Reliability Analyses.

2.2.2.1.1. Reliability of the Scale of Cyber Bullying.

The reliability scores of the Scale of Cyber Bullying and two subscales, which are the Cyber Verbal Bullying and the Cyber Forgery, can be considered high (see Table 3). The reliability

score of the Hiding Identity could be considered low (Cronbach's $\alpha = .72$), by cause of the ninth item ("*Hiding identity on the Internet.*") that had a low item-total correlation ($r = .31$) with the other items in the subscale. Therefore, the ninth item was deleted from the Hungarian adaptation of the scale, and this way the reliability score of this subscale can be considered acceptable (see Table 3).

Table 3. Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the Scale of Cyber Bullying

	Score range (min.-max.)	Mean Score (SD)	Cronbach's α	Skewness Estimate (SD)	Kurtosis Estimate (SD)
Verbal Cyber Bullying	7-35	9.47 (4.14)	0.86	3.36 (0.10)	14.46 (0.19)
Hiding Identity	4-20	4.41 (1.79)	0.90	6.43 (0.10)	46.00 (0.19)
Cyber Forgery	10-50	12.61 (4.03)	0.84	4.14 (0.10)	23.40 (0.19)
Scale of Cyber Bullying	22-110	26.49 (9.04)	0.93	4.44 (0.10)	26.05 (0.19)

2.2.2.1.2. Reliability of the Scale of Cyber Victim.

The reliability scores the Scale of Cyber Victim and two subscales, which are the Victim of Verbal Cyber Bullying and the Victim of Cyber Forgery can be considered high (see Table 4). The reliability score of the Victim of Hiding Identity could be considered low (Cronbach's $\alpha = 0.75$), by cause of the ninth item ("*Hiding identity on the Internet.*") that had low item-total correlation ($r = 0.42$) with the other items in the subscale. Therefore, the ninth item was deleted from the Hungarian adaptation of the scale, with this change the reliability score of this subscale can be considered acceptable (see Table 4).

Table 4. Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the Scale of Cyber Victim

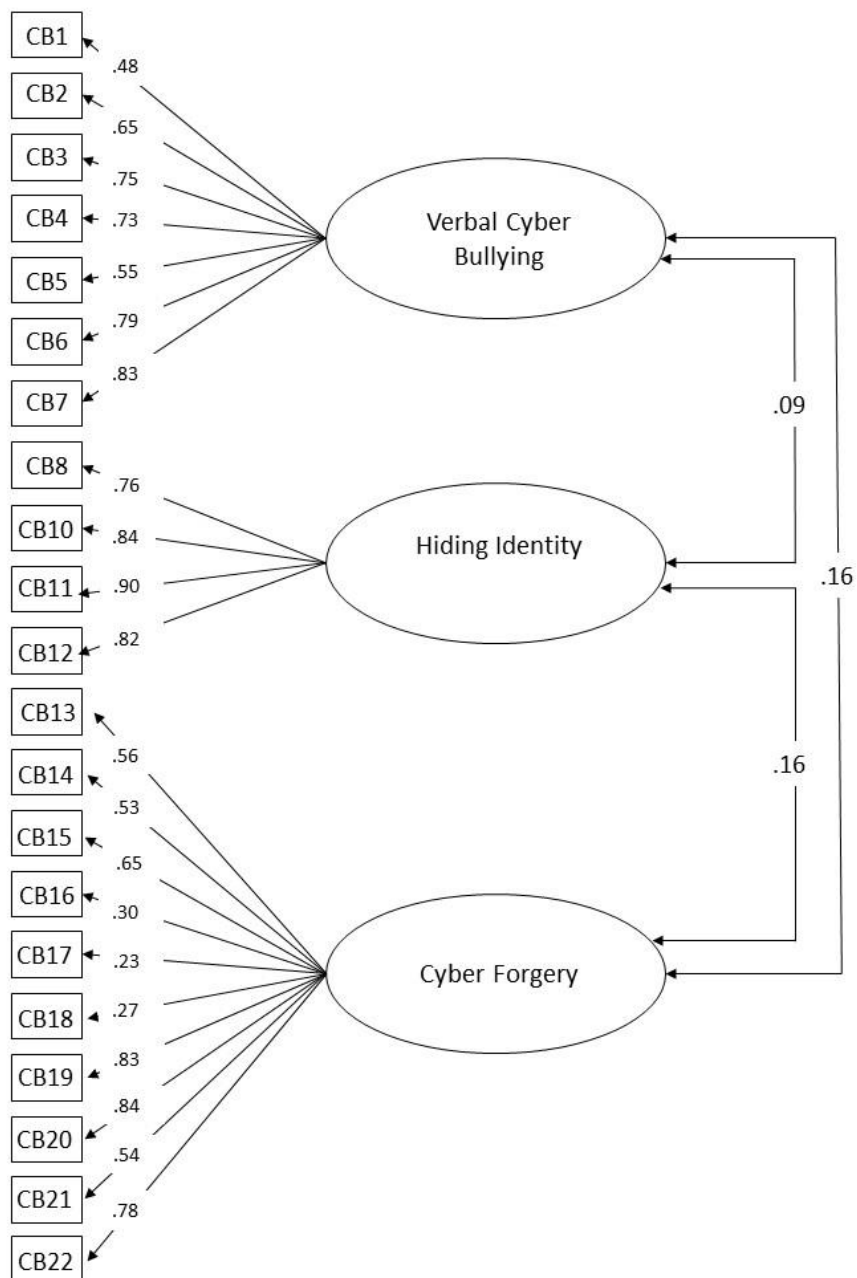
	Score range (min.-max.)	Mean Score (SD)	Cronbach's α	Skewness Estimate (SD)	Kurtosis Estimate (SD)
Victim of Verbal Cyber Bullying	7-35	11.04 (4.63)	0.82	1.77 (0.10)	4.80 (0.19)
Victim of Hiding Identity	4-20	5.30 (2.37)	0.78	3.23 (0.10)	13.21 (0.19)
Victim of Cyber Forgery	10-50	17.14 (5.44)	0.80	1.24 (0.10)	2.21 (0.19)
Scale of Cyber Victim	22-110	33.48 (11.03)	0.90	1.98 (0.10)	6.71 (0.19)

2.2.2.2. Confirmatory Factor Analyses.

2.2.2.2.1. Confirmatory Factor Analysis of the Scale of Cyber Bullying.

According to the results of the confirmatory factor analysis, the original, three-factor model was an acceptable but objectionable approximation in the Hungarian adaptation of the Scale of Cyber Bullying as well (see Figure1). The fitting indices were the following: SRMR=0.05; $\chi^2/df=4.99$; NFI=0.89; TLI=0.89; CFI=0.91; RMSEA=0.08 (90% CI=0.07; 0.09).

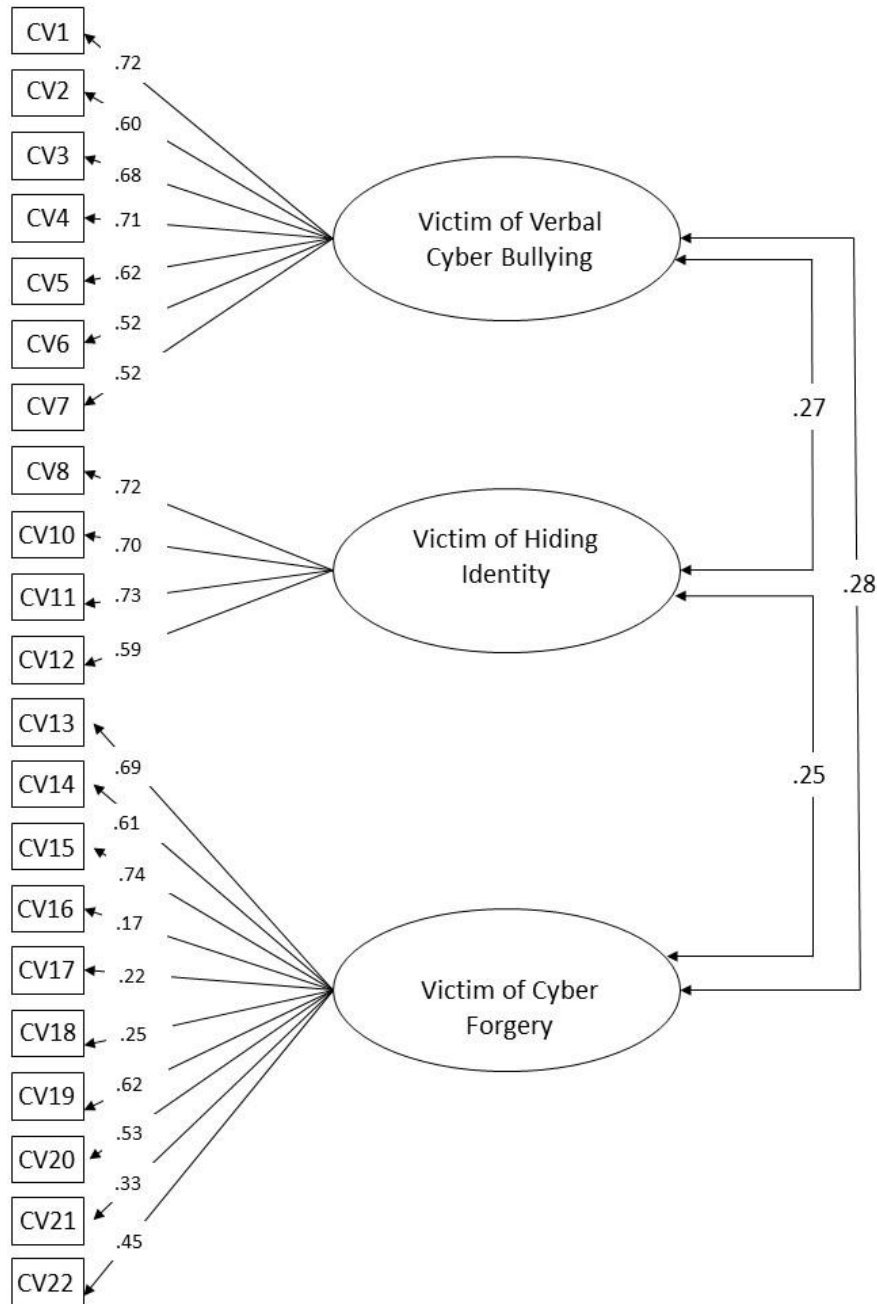
Figure 1: Result of the Scale of Cyber Bullying's confirmatory factor analysis



2.2.2.2.2. *Confirmatory Factor Analysis of the Scale of Cyber Victim.*

According to the results of the confirmatory factor analysis, the original, three-factor model was an acceptable but objectionable approximation in the Hungarian adaptation of the Scale of Cyber Victim as well (see Figure 2). The fitting indices were the following: SRMR=0.07; $\chi^2/df=4.35$; NFI=0.88; TLI=0.89; CFI=0.91; RMSEA=0.07 (90% CI=0.07; 0.08).

Figure2: Result of the Scale of Cyber Victim’s confirmatory factor analysis



2.2.2.3. Criterion Validity.

The Interpersonal Reactivity Index, Anger Expression Scale, and a school climate questionnaire were used in order to test the criterion related validity of the Scale of Cyber Bullying and the Scale of Cyber Victim. There was negative correlation between the Verbal Cyber Bullying subscale and empathy ($\rho = -0.20$, $p = 0.03$), and perspective taking ($\rho = -0.27$, $p < 0.001$). There was a negative correlation between the Scale of Cyber Bullying and perspective taking ($\rho = -0.24$, $p = 0.01$) as well. Further, there was a positive correlation between fantasy and the Victim of Cyber Forgery subscale ($\rho = 0.22$, $p = 0.02$), and between fantasy and the Scale of Cyber Victim ($\rho = 0.22$, $p = 0.02$) as well. Anger/Out correlated statistically significantly with both scales (Scale of Cyber Bullying and Scale of Cyber Victim), as well as with all the subscales (see Table 5). Anger/In correlated statistically significantly with the Victim of Cyber Forgery subscale, and with the Scale of Cyber Victim. The Scale of Cyber Victim correlated statistically significantly and negatively with the school climate. Further, all subscales of the Scale of Cyber Victim correlated statistically significantly and negatively with school climate as well (see Table 5).

Table 5. Correlations among cyberbullying perpetration, cybervictimization, age, anger expressions styles, and school climate

* $p < .05$, ** $p < .01$

	Verbal Cyber Bullying	Hiding Identity	Cyber Forgery	Cyber Bullying	Victim of Verbal Cyber Bullying	Victim of Hiding Identity	Victim of Cyber Forgery	Cyber Victim
Anger/ Out	.29**	.19*	.26**	.34**	.28**	.28**	.29**	.34**
Anger/ In	-.05	.02	.00	-.02	-.12	-.04	-.21*	-.19*
School climate	-.07	.02	-.11	-.09	-.18*	-.19*	-.24**	-.28**
Age	-.13	.07	-.03	-.08	.03	.10	.02	.02

Further analysing the scales and subscales of the CVBS-HU, the associations among the scales and subscales were tested. The Verbal Cyber Bullying was statistically significantly correlated with Hiding Identity ($\rho = .31$, $p < .01$), Cyber Forgery ($\rho = .36$, $p < .001$), Cyber Bullying ($\rho = .73$, $p < .001$), Victim of Verbal Cyber Bullying ($\rho = .26$, $p = .01$), and Cyber Victim ($\rho = .22$, $p = .02$). The Hiding Identity was statistically significantly correlated with Cyber

Forgery ($\rho = .32, p < .001$) and Cyber Bullying ($\rho = .37, p < .001$). The Cyber Forgery was statistically significantly correlated with Victim of Verbal Cyber Bullying ($\rho = .34, p < .001$), Victim of Cyber Forgery ($\rho = .29, p < .01$), Cyber Bullying ($\rho = .86, p < .001$), and Cyber Victim ($\rho = .34, p < .001$). The Victim of Verbal Cyber Bullying was statistically significantly correlated with Victim of Hiding Identity ($\rho = .39, p < .001$), Victim of Cyber Forgery ($\rho = .56, p < .001$), Cyber Bullying ($\rho = .36, p < .001$), and Cyber Victim ($\rho = .80, p < .001$). The Victim of Hiding Identity was statistically significantly correlated with Victim of Cyber Forgery ($\rho = .44, p < .001$), and Cyber Victim ($\rho = .57, p < .001$). The Victim of Cyber Forgery was statistically significantly correlated with Cyber Bullying ($\rho = .31, p < .01$) and Cyber Victim ($\rho = .92, p < .001$). At last, the Cyber Victim and the Cyber Bullying scales were also statistically significantly correlated ($\rho = .37, p < .001$). For the more detailed results see Table 6.

2.2.2.4. Gender Differences.

According to the Mann-Whitney U test, there was a significant gender difference on the Scale of Cyber Bullying and on all the subscales of the Scale of Cyber Bullying (see Table 7). Indeed, males got higher mean scores on all the scales than females did (see Table 7). Further, there was a significant gender difference on the subscale of Victim of Hiding Identity (see Table 7). Females scored statistically significantly higher than males (see Table 7). Regarding the Scale of Cyber Victim, Victim of Verbal Cyber Bullying and Victim of Cyber Forgery subscales, there was no statistically significant difference between males and females.

Table 7. Gender differences in cyberbullying perpetration and cybervictimization

	Mean (SD)		Mann-Whitney U	Significance
	Males	Females		
Verbal Cyber Bullying	10.39 (5.26)	8.81 (2.96)	1152.00	.00
Hiding Identity	6.54 (3.06)	6.03 (1.66)	1568.00	.02
Cyber Forgery	11.15 (5.58)	9.15 (2.97)	1152.50	.00
Scale of Cyber Bullying	28.09 (12.35)	23.99 (6.35)	1047.50	.00
Victim of Verbal Cyber Bullying	11.2 (4.99)	10.93 (4.36)	1712.00	.88
Victim of Hiding Identity	7.27 (6.54)	7.55 (5.62)	1266.00	.01
Victim of Cyber Forgery	14.14 (12.35)	13.76 (6.35)	1454.50	.16
Scale of Cyber Victim	32.59 (13.21)	32.24 (11.34)	1439.00	.19

2.2.3. Discussion.

The aim of this research was to develop and test the psychometric properties of the Hungarian adaptation of the Cyber Victim and Bullying Scale (CVBS-HU, Cetin et al., 2011). The reliability tests of the two scales (Scale of Cyber Bullying and Scale of Cyber Victim) and all the subscales (Cyber Verbal Bullying, Hiding Identity, Cyber Forgery, Victim of Cyber Verbal Bullying, Victim of Hiding Identity, and Victim of Cyber Forgery) supported good or excellent internal consistency, as well as indicated that the items are not redundant. Although, the results demonstrated that the ninth items in both scales did not measure the same type of cyberbullying/cybervictimization as the other items, therefore they are not included in the final version of the Hungarian adaptation of CBVS. The results of the confirmatory factor analyses showed an acceptable but objectionable fitting of the Hungarian adaptation of the CVBS to the

original factor structure. One explanation might be that the items contributing to the third factor (Cyber Forgery) cover more than one type of cyberbullying perpetration and cybervictimization therefore resulting in a mixed, indefinable subscale. In both scales the 16. (“*I forced someone to talk about sexual issues on the Internet. / Someone forced me to talk about sexual issues on the Internet.*”), the 17. (“*I used sexual symbols while chatting on the Internet. / Someone used sexual symbols while chatting with me on the Internet.*”), and the 18. (“*I shared images with sexual content on the Internet. / Someone shared images with me with sexual content on the Internet.*”) items had a low factor loading. These items are assessing a specific type of cyberbullying, i.e. sexual cyberbullying, this might be the reason why they do not fit the ‘Cyber Forgery’ subscale. Further, the 21. item in the Cyber Victim scale (“*Someone used the Internet as a propaganda tool for their own benefit.*”) also has a low factor loading. After looking at the item it seemingly does not even measure a specific behaviour that fits the definition of cyberbullying. Consequently, the CVBS-HU shows one major limitation of multi-item cyberbullying questionnaires, i.e. the questionnaire covers specific behaviours that may not fit the definitional criteria of cyberbullying (Gradinger et al, 2010). Further, the variability of the answers was low, as well as the prevalence of engagement in cyberbullying acts was also low in the sample. Although, to reliably and validly determine the fitting indices of the factor structure on the Hungarian sample, more participants engaging in cyberbullying acts would be needed.

Our results of the criterion validity testing are in line with previous research outcomes (Arıcak & Ozbay, 2016; İcellioğlu & Özden, 2014), showing that Anger/Out is associated with both cyberbullying perpetration and cybervictimization as well as with all of their subtypes (verbal cyber bullying, hiding identity, cyber forgery, victimization of verbal cyber bullying, victimization of hiding identity, and victimization of cyber forgery). Further, Anger/In was found to be associated with cybervictimization that was also previously supported by Siderman (2013). According to the research conducted so far (Brewer & Kerslake, 2015; Kokkinos et al., 2014; Pettalia et al., 2013; Shultze-Krumbholz & Scheithauer, 2009), cybervictims show better empathic skills, whereas cyberbullies have difficulties with feeling vicarious emotions and taking others’ perspective, i.e. empathy. The results of the criterion validity testing showed similar patterns of association among empathy, cyberbullying perpetration and cybervictimization as cybervictimization and victimization of cyber forgery were positively associated with fantasy, whereas verbal cyber bullying and cyberbullying perpetration were negatively associated with empathy and perspective taking. According to the reports of students

engaged in cyberbullying act, their schools' environment is unsupportive, unsafe, and negative in general (Benders, 2012; Hinduja & Patchin, 2010). Although, in our study only cybervictims reported the school environment to be negative. The cybervictimization and cyberbullying scales were positively associated with one another. The cyberbullying perpetration subscales (Cyber Verbal Bullying, Hiding Identity, Cyber Forgery) showed moderate associations with each other, but strong association with the Cyber Bullying scale. However, the Hiding Identity subscale showed weaker correlation with the Cyber Bullying scale. This is quite interesting as it should be also highly correlated with the Cyber Bullying scale. If we look at the items of this subscale, we can see that three out of four items are measuring something identity hiding related, the fourth item ("*I sent infected file/program via e-mails.*") does not. There was no strong correlation between the cyberbullying perpetration and cybervictimization subscales. Even if there was a statistically significant association, it was weak. The cybervictimization subscales (Victim of Cyber Verbal Bullying, Victim of Hiding Identity, and Victim of Cyber Forgery) were moderately associated with one another and they were strongly correlated with the Cyber Victim scale. However, the Victim of Hiding Identity subscale was only moderately correlated with the Cyber Victim subscale. Similarly, to the Cyber Bullying scale's Hiding Identity subscale, the items of the Victim of Hiding Identity subscale are composed the same way: Three out of four items measure something identity hiding related, though the fourth item ("*Someone sent me infected file/program via e-mails.*") does not fit the identity hiding theme. Regarding the gender differences in cyberbullying engagement, boys were found to be more likely engage in cyberbullying acts as perpetrators (Erdur-Baker, 2009; Li, 2006), whereas girls as victims (Slonje & Smith, 2008; Smith et al., 2008; Smith et al., 2006). Similarly to these results, our results showed that boys engaged more likely in verbal cyber bullying, hiding identity, and cyber forgery than girls, while girls became victims of hiding identity more likely than boys. About the role of age in cyberbullying engagement, our results have showed no association between age and cyberbullying perpetration, nor between age and cybervictimization

One strength of the CVBS-HU is that the indices of internal consistency support a greater reliability of the scales in the Hungarian sample than in the original Turkish sample. Further, it measures several types of cyberbullying perpetration and cybervictimization. Although, it is a self-administered measure, consequently the participants' answers might be influenced by biased or distorted memory, social desirability, media representation of cyberbullying, and the students' knowledge about cyberbullying. The most substantial and unavoidable limitation of

the questionnaire is the inadequate fitting indices of the scales that makes the use of this measurement questionable. The inadequate fitting indices can be caused by the items that do not fit the subscales they belong to (e.g. 12, 16, 17, and 18). Furthermore, there are items (e.g. 21) that do not even measure behaviours that fit the definitional criteria of cyberbullying. Consequently, the use of CVBS-HU is questionable and not recommended because the items may not measure cyberbullying exclusively.

Due to the limitations of CVBS-HU, the adaptation of another questionnaire was inevitable, so in a second study we developed the Hungarian adaptation of the European Cyberbullying Intervention Project Questionnaire (ECIPQ) and tested its psychometric properties.

2.3. Hungarian Adaptation of the European Cyberbullying Intervention Project Questionnaire (ECIPQ)

In the second study, our aim was to develop the Hungarian adaptation of the European Cyberbullying Intervention Project Questionnaire (ECIPQ, see Appendix 5). The ECIPQ was chosen as an alternative of the CVBS because it is used in several European countries (Poland, Spain, Italy, Germany, Greece, and United Kingdom), further it measures cyberbullying in general. The ECIPQ measures two dimensions of cyberbullying that are cyberbullying perpetration and cybervictimization. The ECIPQ includes repetition from the definitional criteria, as well as power imbalance implicitly with the inclusion of the perpetrator's better ICT skills and the victim's low level of Internet safety (e.g. *"Someone hacked into my account and pretended to be me (e.g. through instant messaging or social networking accounts)"*) (Del Rey et al., 2015).

The ECIPQ's psychometric analyses were conducted in six European countries (Poland, Spain, Italy, Germany, Greece, and United Kingdom), with participants aged between 11 and 23 years. The reliability scores of both scales, that are the scale measuring cyberbullying perpetration and the scale measuring cybervictimization, could be considered high (Cronbach's $\alpha = .93$ and Cronbach's $\alpha = .97$, respectively). Additionally, both the exploratory and confirmatory factor analyses showed appropriate factor structure and an adequate fitting with the whole sample and with the subsamples of the different countries (Del Rey et al., 2015).

2.3.1. Method.

2.3.1.1. Participants.

One thousand four hundred and twenty-five (662 males, 760 females, and 3 transgender) high school students participated in the validation study of the ECIPQ. They aged between 11 and 19 years, their mean age was 15.29 years (SD = 1.69). To test the criterion validity of the questionnaire we used a subsample of these participants that consisted of 385 students (187 males and 198 females) who aged between 14 and 19 (mean age = 15.78, SD = 1.02).

2.3.1.2. Materials.

The European Cyberbullying Intervention Project Questionnaire (ECIPQ, Del Rey et al., 2015, see Appendix 5) measures cyberbullying perpetration and cybervictimization with 11-11 items. Participants indicated on a five-point scale (0 = never, 1 = once or twice, 2 = once a month, 3 = once a week, 4 = more times a week) how often they engaged in cyberbullying in the past year.

The Interpersonal Reactivity Index (Davis, 1983 trans. Kulcsár, 1998, see Appendix 2) measures empathy and was previously described in the first study (see 2.2.1.2. section).

The Hungarian adaptation of Multidimensional Scale of Perceived Social Support (Zimet et al., 1988 trans. Papp-Zipernovszky et al., 2017, see Appendix 6) measures perceived social support with 10 items. The scale measures perceived support from family (Cronbach's $\alpha = .93$), from friends (Cronbach's $\alpha = .94$), and from a significant other (Cronbach's $\alpha = .93$) with three subscales. Participants indicated on a 7-point Likert-scale (1 = very strongly disagree, 7 = very strongly agree) how much support they perceived from their family, friends, and significant other.

The Child Behaviour Checklist (Achenbach & Edelbrock, 1991 trans. Rózsa et al., 1999, see Appendix 7) measures emotional and behavioural problems in children. The measure has six subscales which are Social Problems (Cronbach's $\alpha = .80$), Anxious/Depressed (Cronbach's $\alpha = .86$), Somatic Complaints (Cronbach's $\alpha = .84$), Attention Problems (Cronbach's $\alpha = .74$), Rule-Breaking Behaviour (Cronbach's $\alpha = .68$), and Aggressive Behaviour (Cronbach's $\alpha = .76$). By using the sum of the scores of the Social Problems and Anxious/Depressed subscales, internalizing problems can be measured (Cronbach's $\alpha = .90$). Further by using the sum of the scores of Rule-Breaking Behaviour and Aggressive Behaviour subscales, externalizing problems can be measured (Cronbach's $\alpha = .84$). Participants answered on a three-point scale

(0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true) how likely the items are characteristic of them.

2.3.1.3. Procedure.

After the ethical approval in conducting this study was granted from the Hungarian United Ethical Review Committee for Research in Psychology (reference number: 2019-97), the same process was used to select participants for the study as described on account of the Cyber Bullying and Victim Scale's validation.

2.3.1.4. Statistical Analyses.

To test the ECIPQ's psychometric properties, reliability and normality tests, as well as confirmatory factor analyses were used. For the evaluation of the fitting indices, Hu and Bentler's (1999) criteria was used. The data showed non normal distribution, therefore non parametric tests were used to test the ECIPQ's criterion validity. Spearman correlations were used to test the relationship among cyberbullying perpetration, cybervictimization, age, empathy, perceived social support, externalizing problems, and internalizing problems. Further, Mann-Whitney U test was used to test whether there are gender differences in cyberbullying perpetration and cybervictimization.

2.3.2. Results.

2.3.2.1. Reliability of the European Cyberbullying Intervention Project Questionnaire (ECIPQ).

The reliability scores of the ECIPQ's both dimensions, that are cyberbullying perpetration (Cronbach's $\alpha = .91$) and cybervictimization (Cronbach's $\alpha = .89$), can be considered high. Although based on the item-total correlations, in the dimension of cyberbullying perpetration the first ("I said nasty things to someone or called them names using texts or online messages.", $r = .53$), second ("I said nasty things about someone to other people either online or through text messages.", $r = .53$), and tenth ("I excluded or ignored someone in a social networking site or internet chat room.", $r = .61$) items do not fit the with the other items well. Similarly, in the dimension of cybervictimization the first ("Someone said nasty things to me or called me names using texts or online messages.", $r = .56$), second ("Someone said nasty things about me to others either online or through text messages.", $r = .64$), and tenth ("I was excluded or ignored by others in a social networking site or internet chat room.", $r = .57$) items had lower item-total

correlations with the other items in the scale. After deleting these items from the Hungarian adaptation of the ECIPQ, the reliability scores can still be considered high (see Table 8).

Table 8. Descriptive statistics, reliability scores, and estimates of skewness and kurtosis of the European Cyberbullying Intervention Project Questionnaire (ECIPQ)

	Score range (min.-max.)	Mean Score (SD)	Cronbach's α	Skewness <i>Estimate (SD)</i>	Kurtosis <i>Estimate (SD)</i>
ECIPQ – cyberbullying perpetration	0-44	13.04(5.18)	.91	2.33(0.07)	13.68(0.13)
ECIPQ - cybervictimization	0-44	14.90(6.26)	.89	1.60(0.07)	5.69(0.13)
ECIPQ – cyberbullying perpetration (without items 1, 2, 10)	0-32	8.55(3.68)	.94	3.11(0.07)	20.19(0.13)
ECIPQ – cybervictimization (without items 1, 2, 10)	0-32	9.67(4.43)	.89	2.26(0.07)	9.08(0.13)

2.3.2.2. Confirmatory Factor Analyses.

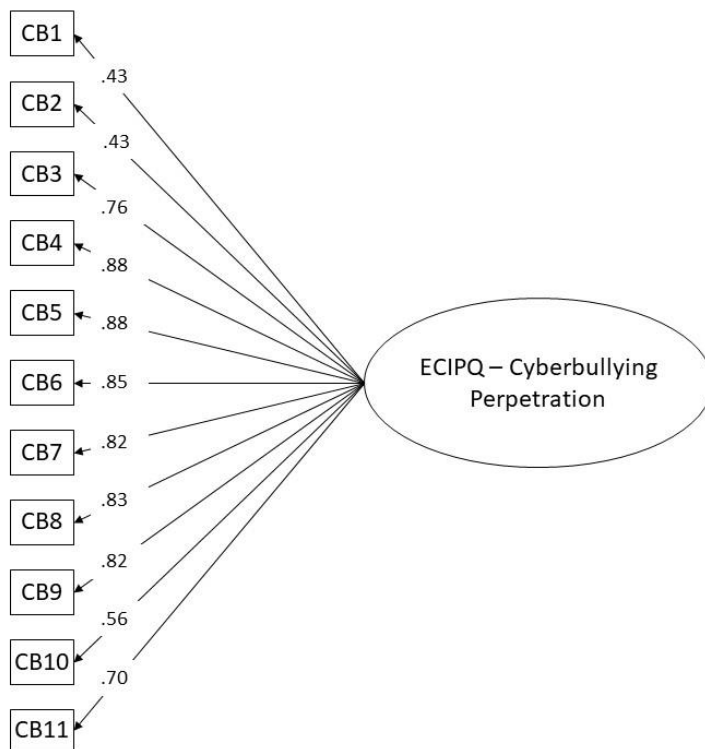
2.3.2.2.1. The Dimension of Cyberbullying Perpetration.

The results of the original scale's confirmatory factor analysis showed an inadequate approximation in the Hungarian sample (see Table 9). Based on the results of the item-total correlations and the items' factor loadings, the scale was further tested without the first ($\beta = .43$), second ($\beta = .43$), and tenth ($\beta = .56$) items. The results of the new scale's confirmatory factor analysis showed an adequate approximation of the Hungarian adaptation of the ECIPQ's cyberbullying perpetration dimension (see Table 9 and Figure 3).

Table 9. Fitting indices of the ECIPQ's dimension of cyberbullying perpetration

	SRMR	χ^2/df	NFI	TLI	CFI	RMSEA (90% CI)
Complete Scale	.04	8.94	.97	.96	.97	.08 (.07; .08)
Without items 1, 2, and 10	.01	3.92	.99	.99	.99	.05 (.03; .06)

Figure 3. Result of the confirmatory factor analysis of ECIPQ's cyberbullying perpetration dimension



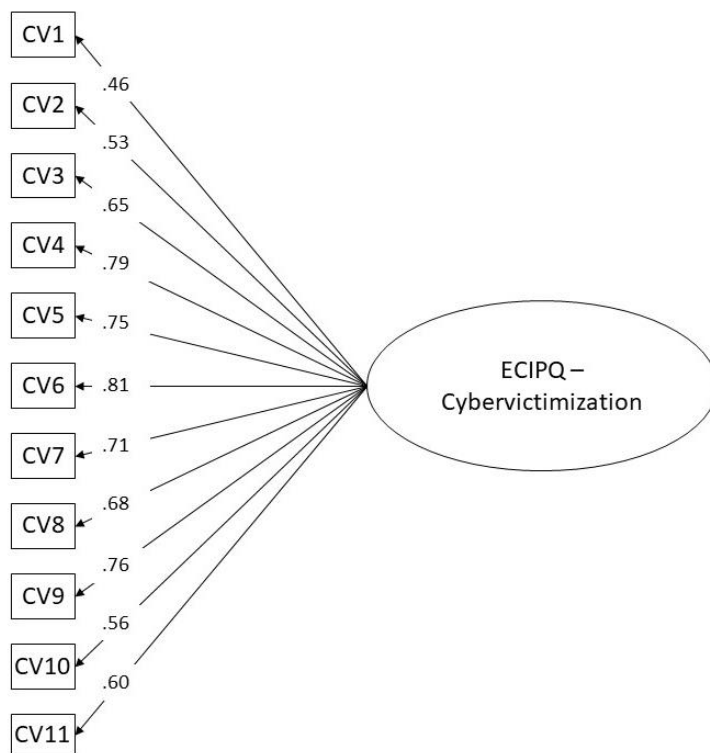
2.3.2.2.2. The Dimension of Cybervictimization.

Similarly to the dimension of cyberbullying perpetration, the results of the original scale's confirmatory factor analysis showed an inadequate approximation of the ECIPQ's cybervictimization dimension in the Hungarian sample (see Table 10). Based on the results of the item-total correlations and the items' factor loadings, the scale of cybervictimization was also further tested without the first ($\beta = 0.46$), second ($\beta = 0.53$), and tenth ($\beta = 0.56$) items. The results of the new scale's confirmatory factor analysis showed an adequate approximation of the Hungarian adaptation of the ECIPQ's cybervictimization dimension (see Table 10 and Figure 4).

Table 10. Fitting indices of the ECIPQ's dimension of cybervictimization

	SRMR	χ^2/df	NFI	TLI	CFI	RMSEA (90% CI)
Complete Scale	.05	10.38	.95	.94	.96	.08 (.07; .09)
Without items 1, 2, and 10	.02	5.04	.99	.98	.99	.05 (.04; .07)

Figure 4. Result of the confirmatory factor analysis of ECIPQ's cybervictimization dimension



2.3.2.3. Criterion Validity.

According to the results of Spearman correlations, cyberbullying perpetration correlated statistically significantly with internalizing problems ($\rho = .23, p < .001$), externalizing problems ($\rho = .54, p < .001$), and perceived social support from family ($\rho = -.17, p < .01$). Cybervictimization correlated statistically significantly with internalizing problems ($\rho = .33, p < .001$), externalizing problems ($\rho = .43, p < .001$), perceived social support from family ($\rho = -.25, p < .001$), from friends ($\rho = -.11, p = .04$) and from significant other ($\rho = -.11, p = .04$), and personal distress ($\rho = .14, p = .01$). Cyberbullying perpetration and cybervictimization were also correlated statistically significantly ($\rho = .51, p < .001$). For the more detailed results see Table 11.

Table 11. Spearman correlations among cyberbullying perpetration, cybervictimization, age, perceived social support, externalizing and internalizing problems, and empathy

*p<.05, **p<.01

	Support from friends	Support from family	Support from significant other	Fantasy	Empathic Concern	Perspective Taing	Personal Distress	Internalizing problems	Externalizing problems	Age
Cyberbullying perpetration	-.08	-.17**	-.03	.04	-.06	-.06	.08	.23**	.54**	.06
Cybervictimization	-.11*	-.25**	-.11*	.01	-.04	-.01	.14**	.33**	.43**	.04

2.3.2.4. Gender Differences.

According to the results of the Mann-Whitney U tests, there was no significant difference between males and females regarding cyberbullying perpetration ($U = 17428.50$, $p = .27$) and cybervictimization ($U = 17166.50$, $p = .21$).

2.3.3. Discussion.

As the research of cyberbullying have become exceedingly important in Hungary, for both researchers and practitioners, the adaptation of a valid and reliable questionnaire measuring cyberbullying engagement have also come to be of great significance. As the CVBS-HU showed irreducible limitations, e.g. the objectionable fitting indices, the items that do not fit the definition of cyberbullying and/or the subscales, with the adaptation of the ECIPQ we aimed to have such measure.

The reliability analyses showed that the scales have good or excellent internal consistency, as well as the items were not redundant. Based, on the item-total correlation, factor loading, and error covariance estimates, the ECPQ should be used without the first, the second, and the tenth items as they show little consistency with the other items and the scales. However, these items cover important aspects of cyberbullying behaviour and cybervictimization. So despite these results we do not leave them out when later using the ECIPQ.

Similarly to previous research (Bonanno & Hymel, 2013; Garaigordobil & Machimbarrena, 2019; Hinduja & Patchin, 2007; Patchin & Hinduja, 2010), we have found that both cyberbullying perpetration and cybervictimization is associated with internalizing and externalizing problems. Further, previous research (Brewer & Kerslake, 2015; Shultze-Krumbholz & Scheithauer, 2009) found cyberbullies to have difficulties with empathy. However, our results showed no associations between cyberbullying perpetration and empathy. Cybervictimization although was associated with personal distress that is in line with previous research that showed cybervictims having sensitive empathic skills (Almeida et al., 2012; Casas et al., 2013; Del Rey et al., 2016). As showed by previous research (Baldry et al., 2015; Bayraktar et al., 2015; Calvete et al., 2010; Fanti et al., 2012; Fridh et al., 2015; Heerde & Hemphill, 2018; Kowalski et al., 2014; Martins et al., 2016; Solecki et al., 2014; Wang et al., 2009; Williams and Guerra, 2007), we found that both cyberbullying perpetration and cybervictimization are associated with lower levels of perceived social support from family, additionally cybervictims reported a lower level of social support from friends and a significant

other as well. Moreover, cyberbullying perpetration and cybervictimization were moderately associated with one another. Previous research also showed that the cyberbullying roles are not separated but fluid (DeSmet et al., 2014; DeSmet et al., 2016; Van Cleemput et al., 2014), youngsters usually are involved in more than just one role in cyberbullying incidents. This may be why, the associations of the two scales with empathy, social support, and externalizing and internalizing problems are very similar. Previous studies showed an inconsistency regarding the gender differences in cyberbullying engagement. Some studies have found a significant difference between boys and girls (Hinduja & Patchin, 2008; Juvonen & Gross, 2008; Li, 2006; Patchin & Hinduja, 2006; Williams & Guerra, 2007; Ybarra et al., 2007), i.e. boys engaging more likely in cyberbullying perpetration, and girls more likely in cybervictimization. Whereas, other studies (Dehue et al., 2008; Kowalski & Limber, 2007; Ybarra et al., 2007; Ybarra & Mitchell, 2008) have found no significant difference between the genders. Our results supported the latter. Overall, there is more research needed to establish whether there are gender differences in cyberbullying engagement, in order to have reliable results there is a need for the establishment of cyberbullying's definition as the inconsistent results might arise from the different definitional criteria that the studies are based on. Regarding the role of age in cyberbullying engagement, the results did not show any association between cyberbullying perpetration and age, nor between cybervictimization and age.

The most prominent strength of ECIPQ is its excellent psychometric properties. The ECIPQ also has limitations, as it is a self-administered questionnaire, social desirability, shame, and the morally questionable nature of cyberbullying might influence the participants' answers. Another statistical limitation is that the first, the second, and the tenth items are not consistent with the other items of the scales, however we do not suggest to leave out these items since they measure important behavioural aspects of cyberbullying.

2.4. Overall Discussion of Study 1

In the first study, the psychometric analyses of the Cyber Victim and Bullying Scale's (CVBS-HU) and the European Intervention Project Questionnaire's (ECIPQ) Hungarian adaptations were conducted. The CVBS-HU contains two of Olweus' (1994) three criteria, i.e. intentional harm and power imbalance, as well as one criterion specific to cyberbullying, that is anonymity. Whereas, the ECIPQ also includes two of Olweus' (1994) three criteria, i.e. repetition and power imbalance. Cyberbullying conducted via the Internet is assessed by the CVBS-HU, while the ECIPQ includes the Internet, as well as mobile phones as the devices/media through which

cyberbullying could happen. Both questionnaires include the concept of cyberbullying perpetration as well as the concept of cybervictimization. Furthermore, the CVBS-HU has subscales assessing different types of cyberbullying and cybervictimization. Both measures can be used for the investigation of cyberbullying during adolescence. Both measures have the self-administered nature and the lack of test-retest reliability as limitations. The CVBS-HU's confirmatory factor analyses showed an inadequate fitting of the data to the original factor structure and some of the items do not fit the definition of cyberbullying and/or the subscale they belong to. Whereas, the ECIPQ's confirmatory factor analyses showed an adequate approximation of the Hungarian adaptation, but according to the statistical analyses the first, the second, and the tenth items are not consistent with the other items and the scales. On the contrary of these statistical data, these items measure prominent aspects of cyberbullying, so we do not suggest to leave them out (for the summary see Table 12).

It is important to note that these results are based on a non-representative study. So, in the future longitudinal research should be pursued with a representative sample that would enable to test the test-retest reliability, as well as the causal relations of cyberbullying with certain individual and social factors (e.g. family and peer effects, social skills, aggression, etc.). Further, a representative study about the prevalence of cyberbullying and cybervictimization is necessary in order to determine the need for prevention/intervention programs in Hungary.

Overall, the first study aimed to develop the Hungarian adaptations of two questionnaires measuring cyberbullying perpetration and cybervictimization. Based on the psychometric analyses, the CVBS-HU is a more limited measure that should be used without the questionable items or not at all, whereas the ECIPQ is a more general measure that has excellent psychometric properties. Both questionnaires have strengths as well as limitations that should be considered when choosing a measure that fits the purpose of the research.

Table 12. Summary of the psychometric properties, strengths and limitations of the CVBS-HU and the ECIPQ

	CVBS-HU	ECIPQ
Definitional criteria included in the measures	Intentional Harm Power Imbalance Anonymity	Repetition Power Imbalance
Means of cyberbullying	Internet	Mobile Phone Internet
Age	14-19 years	11-19 years
Subscales	Scale of Cyber Bullying <ul style="list-style-type: none"> • Verbal Cyber Bullying • Hiding Identity • Cyber Forgery Scale of Cyber Victim <ul style="list-style-type: none"> • Victim of Verbal Cyber Bullying • Victim of Hiding Identity • Victim of Cyber Forgery 	Scale regarding cyberbullying perpetration Scale regarding cybervictimization
Fitting Indices	<p>Scale of Cyber Bullying: SRMR=.05; $\chi^2/df=4.99$; NFI=.89; TLI=.89; CFI=.91; RMSEA=.08 (90% CI=.07; .09)</p> <p>Scale of Cyber Victim: SRMR=.07; $\chi^2/df=4.35$; NFI=.88; TLI=.89; CFI=.91; RMSEA=.07 (90% CI=.07; .08)</p>	<p>Scale regarding cyberbullying perpetration: <i>Complete scale:</i> SRMR=.04; $\chi^2/df=8.94$; NFI=.97; TLI=.96; CFI=.97; RMSEA=.08 (90%CI=.07; .08)</p> <p><i>Without items 1, 2, and 10:</i> SRMR=.01; $\chi^2/df=3.92$; NFI=.99; TLI=.99; CFI=.99; RMSEA=.05 (90%CI=.03; .06)</p>

Reliability

Scale of Cyber Bullying:

Cronbach's α = .92

- Verbal Cyber Bullying:

Cronbach's α = .86

- Hiding Identity:

Cronbach's α = .89

- Cyber Forgery:

Cronbach's α = .76

Scale of Cyber Victim:

Cronbach's α = .89

- Victim of Verbal Cyber Bullying:

Cronbach's α = .82

- Victim of Hiding Identity:

Cronbach's α = .78

- Victim of Cyber Forgery:

Cronbach's α = .84

Limitations

Self-administered nature

Missing test-retest reliability

Fitting indices

Scale regarding cybervictimization:

Complete scale: SRMR=.05; χ^2/df =10.38; NFI=.95; TLI=.94; CFI=.96; RMSEA=.08 (90%CI=.07; .09)

Without items 1, 2, and 10:

SRMR=.02; χ^2/df =5.04; NFI=.99; TLI=.98; CFI=.99; RMSEA=.05 (90%CI=.04; .07)

Scale regarding cyberbullying perpetration:

Cronbach's α = .94

Scale regarding cybervictimization:

Cronbach's α = .89

Self-administered nature

Missing test-retest reliability

Items 1, 2, and 10

3. SECOND STUDY – CYBERVICTIMIZATION AND CYBERBULLYING: THE ROLE OF SOCIO-EMOTIONAL SKILLS²

3.1. Introduction

Based on the SEL theory of bullying engagement, we know that socio-emotional skills have a significant role in traditional bullying, e.g. empathy (Caravita et al., 2009) and moral disengagement (Perren & Gutzwiller-Helfenfinger, 2012) and SEL is used in both prevention and intervention programs against traditional bullying in schools. According to previous research evidence, socio-emotional skills also seem to play a role in cyberbullying engagement. However, the studies conducted so far show inconsistencies regarding the role of empathy, maladaptive emotion regulation strategies and moral disengagement that need to be clarified. Thus, our second study aimed to be an exploratory study to discover which socio-emotional skills have a role in cyberbullying engagement and to explore how they may affect cyberbullying engagement while taking a developmental viewpoint, as well. The study was conducted after the validation of the CVBS-HU and before the validation of the ECIPQ.

3.1.1. The Role of Socio-Emotional Skills in Cyberbullying Engagement.

A large body of literature (Ang & Goh, 2010; Barlinska et al., 2013; Brewer & Kerslake, 2015; Del Rey, et al., 2016; Schulze-Krumbholz & Scheitauer, 2009; Steffgen et al., 2009, 2011) confirm that lack of empathy could explain cyberbullying behaviour among adolescents. Empathy helps individuals to take others' perspective, to feel congruent but not identical vicarious emotions by witnessing another person's experiences, emotions or suffering (Batson et al., 1987). Cyberbullies are unable to understand and feel the vicarious emotions of others (Brewer & Kerslake, 2015; Steffgen et al., 2009, 2011). Moreover, cyberbullies not only show low empathy in the affective domain but they tend to lack the skill to take others' perspective (Ang & Gogh, 2010; Del Rey et al., 2016). Further on, cybervictims also seem to lack the skill of taking others' perspective and feeling others' emotions (Schultze-Krumbholtz & Scheitauer, 2009; Schultze-Krumbholtz & Scheitauer, 2013; Wong et al., 2014). Although, the link between cybervictimization and empathic skills seems to be more complicated. For instance, in some studies (Brewer & Kerlslake, 2015; Renati et al., 2012; Zych et al., 2019), findings show that empathy does not explain cybervictimization among adolescents. Further, other studies

² This subchapter is based on the following brief research report: *Arató N., Zsidó A. N., Lénárd K., & Lábadi B. (2020). Cybervictimization and Cyberbullying: The Role of Socio-Emotional Skills. *Frontiers in Psychiatry, 11**

(Almeida et al., 2012; Casas et al., 2013; Del Rey et al., 2016) suggest that cybervictims show empathic sensitivity to others' affective states. Taken together, previous studies have showed a consensus on the lack of empathic skills characterizing cyberbullies, whereas the role of empathy in cybervictimization is unclear.

Emotion regulation also can serve as an important factor in cyberbullying. If youngsters are unable to use adaptive forms of emotion regulation strategies, the risk of engagement in cyberbullying increases (Baroncelli & Ciucci, 2014; Giancesini & Brighi, 2015). The adaptive regulation of emotions has crucial role in successful social functioning (Gross & John, 2003), social competence (Eisenberg & Fabes, 1992), emotional and cognitive well-being (Quoidbach et al., 2010), and regulation of aggression (Robertson et al., 2012). Indeed, adolescents who dysregulate their negative emotions are more at risk to become cyberbullies (Baroncelli & Ciucci, 2014). Cybervictims also show problems with regulating their emotions (Giancesini & Brighi, 2015). Based on the Cyclic Process Model (den Hamer & Konijn, 2016), if cybervictimized adolescents are not able to regulate the wide range of negative emotions – i.e. heightened levels of anger, depression, distress – that can be the antecedent of their tendency to become cyberbullies. Previous studies suggested that maladaptive emotion regulation explains perpetration of cyberbullying. Yet, it is not clear which of the maladaptive emotion regulatory strategies - blaming others, rumination, catastrophizing or self-blame (Garnefski et al., 2001) - have a role in cyberbullying or cybervictimization.

Cyberbullies may use selective activation and disengagement of internal and moral standards – i.e. moral disengagement (Bandura et al., 1996) – to avoid feelings of guilt in the lack of socio-emotional skills. Moral disengagement is a set of cognitive strategies that reconstruct cruel behaviour as serving socially worthy or moral purposes (social and moral justification), exploit the contrast principle (advantageous comparison), use language to make the behaviour socially acceptable (euphemistic language), reduce accountability for the behaviour (displacement and diffusion of responsibility), ignore, minimize or distort the consequences of the act (disregarding and denial of injurious effects) or blame the victim for the behaviour (dehumanizing, attribution of blame) (Bandura, 1999). Cyberbullies frequently use moral disengagement strategies to justify their aggressive online behaviour (Bussey et al., 2015; Renati, et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016). Specifically, cyberbullies use diffusion of responsibility, distortion of consequences and attribution of blame to minimize the feelings of guilt and the consequences of their acts (Renati et al., 2012; Robson & Witenberg, 2013). Additionally, both cyberbullies and bully-victims manipulate the

reconstruction of their behaviour to be seen as socially acceptable by using moral justification, euphemistic labelling and advantageous comparison (Renati et al., 2012). Although, most of the previous studies have used a generalized method to measure moral disengagement strategies (Bandura et al., 1996), whereas they lack the use of a specified method (e.g. Cyber Bullying Moral Disengagement Scale, Bussey et al., 2015) that measures moral disengagement in cyberbullying situations and might lead to a more specific conclusion about the role of moral disengagement in cyberbullying.

In sum, the findings from previous studies suggest a relationship between socio-emotional skills and cyberbullying (Ang & Goh, 2010; Barlinska et al., 2013; Baroncelli & Ciucci, 2014; Brewer & Kerlake, 2015; Del Rey et al., 2016; den Hamer & Konijn, 2016; Gianesini & Brighi, 2015; Schulze-Krumbhulz & Scheitauer, 2009; Steffgen et al., 2009, 2011). Empathy, adaptive emotion regulation and lack of use of moral disengagement strategies could be possible protective factors against cyberbullying behaviour. However, findings for associations between socio-emotional competences and cybervictimization are less consistent. Previous studies reported contradictory findings from the no relationship to the high empathy associated to cybervictimization. Additionally, the specific maladaptive emotion regulation strategies cybervictims use are also unclear. Further research is necessary to understand whether impaired socio-emotional competence is responsible for the use of moral disengagement in cyberbullying.

3.1.2. Aim of Study.

The goal of our study was to analyse the role of affective and cognitive empathy, intention to comfort, specific adaptive and maladaptive emotion regulation strategies and moral disengagement in perpetration of cyberbullying and cybervictimization. The first objective of our study was to clarify the inconsistent previous results and examine whether lack of empathic skills also characterize the cybervictims as well as cyberbullies. We hypothesized that cybervictims are unable to feel vicarious emotions and take others' perspective. Another aim of this study was to explore the role of moral disengagement in cyberbullying and its relation to the role of empathy and emotion regulation in cyberbullying. Therefore, we hypothesized that whereas cyberbullies and bully-victims use moral disengagement to suppress the feelings of guilt, they are unable to understand their own as well as others' emotions. A third goal of this study was to explore the specific maladaptive emotion regulation strategies that may have a predictive role in cybervictimization.

3. 2. Methods

3.2.1. Participants.

The participants were 524 Caucasian adolescents (40.84% boys, $M=15.73$, $SD=1.30$; 59.16% girls, $M=15.72$, $SD=1.20$), aged 12-19 years ($M= 15.73$, $SD= 1.24$). Regarding their school type, 8.8 % of the students were attending primary school, 76.1 % were high school students, 14.9 % were attending vocational high school, and 0.2 % (1 student) was attending vocational school. About the students' place of residence: 4% of the students were living in the capital, 22.1% in chief town of a county, 39.5 % were living in a city, and 34.4 % were living in villages. The students were asked how much time they spend on a day with using the Internet: 4.8 % of the participating students spent less than an hour, 24.4 % spent 1-2 hours, 25.4 % spent 2-3 hours, 19.8 % spent 3-4 hours, and 25.2 % of the students spent more than 4 hours on the Internet per day. Ethical approval in conducting this study was granted from the Hungarian United Ethical Review Committee for Research in Psychology (reference number: 2017/96).

3.2.2. Materials.

We used a quantitative comparative correlational design by means of four anonymous self-administered questionnaires (For the mean scores, standard deviations and Cronbach's alphas see Table 13):

The short version of the Cyber Victim and Bullying Scale (CVBS-S, Arató et al., unpublished, see Appendix 8) is an abbreviated form of the Cyber Victim and Bullying Scale (CVBS-HU, Cetin et al., 2011 trans. Arató et al., 2019). As the original CVBS-HU showed problematic psychometric properties, this shorter version of the questionnaire was created based on the Item Response Theory (IRT) and the confirmatory factor analyses. The participants of the shortening procedure were 632 high school students (261 men, mean age=16.47, $SD=1.50$). The CVBS-S' measures cyberbullying perpetration and cybervictimization without subscales with 11-11 items in both scales. Since this scale had not been used or validated before, confirmatory factor analyses was used with this sample to test whether the items reliably reflected cyberbullying. The results confirmed an acceptable model fit: $CMIN/DF=2.66$; $RMSEA=0.06$ (90% $CI=0.05$; 0.06); $SRMR=0.07$; $TLI=0.92$; $CFI=0.094$. Cronbach Alpha for the scale of cyberbullying perpetration was 0.83, for the scale of cybervictimization it was 0.87. Participants answered on a five-point scale (1=never, 2=rarely, 3=occasionally, 4=frequently, 5=always) to indicate how often they engaged in cyberbullying activities or became victims of it in the last one year.

The Empathy Questionnaire for Children and Adolescents (EmQue-CA, Overgaauw et al., 2017, see Appendix 9) is a self-report measure consisting of 14 items and three scales: (1) affective empathy measuring the extent to which someone is feeling other's distress (Cronbach's $\alpha = .66$), (2) cognitive empathy measuring the extent to which someone understands why others are in distress (Cronbach's $\alpha = .72$), (3) intention to comfort measuring the extent to which someone wants to help distressed others (Cronbach's $\alpha = .74$). The questionnaire was chosen for this study because it is designed to measure empathy especially among children and adolescents. Further, its three subscales fitted our research aims better than the previously used IRI's. The participants answered on a three-point Likert-type scale (1 - not true, 2 - somewhat true, 3 - true) whether the empathy-related descriptions were true for them.

The Cognitive Emotion Regulation Questionnaire (CERQ, Garnefsky & Kraaij, 2007 trans. by Miklósi et al., 2011, see Appendix 10) consist of 36 items and has nine scales. Five scales measure adaptive emotion regulation strategies: acceptance (Cronbach's $\alpha = .65$), positive refocusing (Cronbach's $\alpha = .88$), planning (Cronbach's $\alpha = .81$), positive reappraisal (Cronbach's $\alpha = .78$) and putting into perspective (Cronbach's $\alpha = .73$). An additionally four scales measure maladaptive emotion regulation strategies: self-blame (Cronbach's $\alpha = .81$), rumination (Cronbach's $\alpha = .83$), catastrophizing (Cronbach's $\alpha = .74$) and other blame (Cronbach's $\alpha = .75$). The CERQ uses a five-point Likert-type scale to measure the extent, subjects use the different emotion regulation strategies after a stressful event.

The Cyber Bullying Moral Disengagement Scale (CBMDS, Bussey et al., 2015, see Appendix 11) is a one factor scale consisting of 8 items (Cronbach's $\alpha = .73$). Each item refers to cyberbullying and one item represents each of the moral disengagement mechanisms: moral justification, euphemistic language, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame and dehumanizing. Participants implied on a four-point Likert-scale (1 - don't agree, 4 - totally agree) to what extent they agreed with the statements.

3.2.3. Procedure.

After the school principal agreed to participate in the study, parents' consent were asked. The students completed the questionnaires by paper-pencil during school hours supervised by teachers or research assistants.

3.2.4. Statistical Analysis.

We created four cyberbullying groups to test the differences between cyberbullies, cybervictims, bully-victims and outsiders (students not involved in cyberbullying) using the mean scores and standard deviations (for the mean scores and standard deviation see Table 11 & 12). Students were considered cyberbullies if they scored higher than the sum of the mean and one standard deviation on cyberbullying perpetration scale of CVBS-S. Students scoring higher than the sum of the mean and one standard deviation on the cybervictimization scale of CVBS-S were considered as cybervictims. Students scoring higher than the sum of the mean and one standard deviation on both the cyberbullying perpetration and the cybervictimization scales of the CVBS-S were considered as bully-victims. Consequently, those scoring lower than the mean on both the cyberbullying perpetration and the cybervictimization scales of the CVBS-S were considered as outsiders. Based on this grouping, 6.9 % of the students were cyberbullies, 13.5 % were cybervictimized, 5.2 % were bully-victims and 74.4 % were outsiders.

The distribution of the scales is acceptable as normal, except for the cyberbullying perpetration scale, intention to comfort (EmQue-CA), and catastrophizing (CERQ). However, with large sample sizes (> 30 or 40) parametric procedures can be used even if the data violates the normality assumption (Altman & Bland, 1995; Elliott & Woodward, 2007; Ghasemi & Zahediasl, 2012). So, Pearson correlations, multivariate analyses of variance (MANOVAs) and linear regression analyses were used to test the associations among the variables. Multivariate analyses of variance (MANOVAs) with Bonferroni-corrected post-hoc tests were conducted to explore the differences between age groups (12-14, 15-16 and 17-19 years olds) in cyberbullying perpetration and cybervictimization. Also, multivariate analyses of variance (MANOVAs) with Bonferroni-corrected post-hoc tests were performed to discover differences among the cyberbullying groups in empathy, moral disengagement and emotion regulation. Pearson correlations were conducted to explore the relationship among cyberbullying perpetration, cybervictimization, empathy, adaptive and maladaptive cognitive emotion regulation strategies and moral disengagement scales. Based on the correlational analyses we ran linear regression analyses. A regression analysis with stepwise extension was conducted to determine the predictors of cyberbullying perpetration with age, other blame, affective and cognitive empathy, intention to comfort and moral disengagement as independent variables. Another regression model with stepwise extension was tested to determine the predictors of cybervictimization with age, self-blame, rumination, acceptance, planning and cognitive empathy as predictor variables.

Table 13. Descriptive statistics and Spearman correlation for the variables in the second study

*p<.05, **p<.01

	Cyberbullying perpetration	Cybervictimization	Mean score	Std. deviation	Skewness (SD)	Kurtosis (SD)	Cronbach's Alpha
(1) Cyberbullying perpetration (CVBS-S)	1	.27**	13.54	4.08	2.73 (.11)	8.86 (.21)	.83
(2) Cybervictimization (CVBS-S)	.27**	1	23.45	8.53	0.39 (.11)	- 0.39 (.21)	.87
(3) Affective empathy (EmQue- CA)	-.24**	-.01	12.21	2.65	0.19 (.11)	-0.14 (.21)	.66
(4) Cognitive empathy (EmQue- CA)	-.20**	.16**	7.39	1.45	-0.66 (.11)	-0.22 (.21)	.72
(5) Intention to comfort (EmQue- CA)	-.23**	.04	12.86	2.10	-1.07 (.11)	0.79 (.21)	.74
(6) Self-blame (CERQ)	-.04	.18**	10.41	3.51	0.45 (.11)	-0.06 (.21)	.81
(7)Rumination (CERQ)	-.08	.17**	11.62	4.00	0.18 (.11)	-0.63 (.21)	.83
(8) Catastrophizing (CERQ)	.02	.00	8.06	3.83	1.08 (.11)	1.16 (.21)	.74
(9) Other blame (CERQ)	.15**	.02	8.53	2.89	0.88 (.11)	0.73 (.21)	.75
(10) Acceptance (CERQ)	-.02	.17**	11.24	3.33	-0.01 (.11)	-0.37 (.21)	.65
(11) Positive refocusing (CERQ)	-.04	.06	10.91	4.20	0.26 (.11)	-0.71 (.21)	.88
(12) Planning (CERQ)	-.06	.17**	13.40	3.70	-0.20 (.11)	-0.46 (.21)	.81
(13) Positive reappraisal (CERQ)	-.05	.03	11.98	3.85	0.06 (.11)	-0.57 (.21)	.78
(14) Putting into perspective (CERQ)	-.05	.00	11.29	3.52	0.15 (.11)	-0.53 (.21)	.73
(15) Moral disengagement (CBMDS)	.46**	.04	13.45	4.13	0.85 (.11)	0.50 (.21)	.73

Table 14. Descriptive data about the prevalence of cyberbullying and cybervictimization in gender and age groups in the second study

	Girls (n=309) M (SD)	Boys (n=214) M (SD)	12-14 years olds (n=79) M (SD)	15-16 years olds (n=310) M (SD)	17-19 years olds (n=135) M (SD)
Cyberbullying perpetration (CVBS-S)	12.66 (3.12)	14.80 (4.92)	13.61 (4.79)	13.33 (3.81)	13.96 (4.24)
Cybervictimization (CVBS-S)	22.98 (8.14)	24.14 (9.05)	21.66 (9.48)	23.31 (8.64)	24.83 (7.47)
	Prevalence – girls (%)	Prevalence – boys (%)	Prevalence – 12-14 years olds (%)	Prevalence - 15-16 years olds (%)	Prevalence - 17-19 years olds (%)
Cyberbullies	2.60	13.10	6.30	5.50	10.40
Cybervictims	13.90	13.10	15.20	13.90	11.90
Bully-victims	2.90	8.40	3.80	5.20	5.90
Outsiders	80.60	65.40	74.70	75.50	71.90

3.3. Results

For the descriptive data, prevalence of cyberbullying and cybervictimization in gender and age groups see Table 13 and 14.

3.3.1. Differences among the age groups (12-14, 15-16, and 17-19 years olds) regarding their cyberbullying engagement.

The analysis of variance revealed no significant difference among the age groups regarding their cyberbullying perpetration ($F [2, 520] = 1.13, p = .32, \eta_p^2 = .004$). On the other hand, there was significant difference among the age groups in cybervictimization ($F [2, 520] = 3.72, p = .03, \eta_p^2 = .01$). According to the Bonferroni-corrected post-hoc tests 17-19 years olds scored statistically significantly higher on the cybervictimization scale than 12-14 years olds (for the age groups' means scores and standard deviations see Table 14).

3.3.2. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in empathy.

The analysis of variance revealed statistically significant differences between the cyberbullying groups in affective empathy ($F [3, 502] = 7.78, p < .001, \eta_p^2 = .04$). According to the Bonferroni-corrected post-hoc tests outsiders scored significantly higher than cyberbullies and bully-victims, as well as cybervictims scored significantly higher than cyberbullies and bully-victims. The two latter groups did not differ, also cybervictims and outsiders did not differ in empathy (for mean scores and standard deviations see Table 15). The cyberbullying groups also differed in cognitive empathy ($F [3, 502] = 7.14, p < .001, \eta_p^2 = .04$). Reported by the Bonferroni-corrected post-hoc tests cybervictims scored significantly higher than cyberbullies and bully-victims. The two latter groups did not differ, as well as cybervictims and outsiders did not differ (for the mean scores and standard deviation see Table 15). We also found a significant group difference on the intention to comfort scale ($F [3, 502] = 9.35, p < .001, \eta_p^2 = .05$). According to the Bonferroni-corrected post-hoc tests outsiders scored significantly higher than cyberbullies and bully-victims. The two latter groups did not differ. Also, cybervictims scored significantly higher than cyberbullies (for mean scores and standard deviations see Table 15).

3.3.3. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in moral disengagement.

The analysis of variance revealed statistically significant differences among the cyberbullying groups in moral disengagement ($F [3, 502] = 26.32, p < .001, \eta_p^2 = .14$). According to the

Bonferroni-corrected post-hoc tests cyberbullies and bully-victims scored significantly higher than cybervictims and outsiders. The two latter groups, as well as cyberbullies and bully-victims did not differ (for the mean scores and standard deviations see Table 15).

3.3.4. Differences among the cyberbullying groups (cyberbullies, cybervictims, bully-victims and outsiders) in emotion regulation strategies.

The analysis of variance revealed statistically significant differences between the cyberbullying groups in self-blame ($F [3, 502] = 3.66, p = .01, \eta_p^2 = .02$). Based on the Bonferroni-corrected post-hoc tests cybervictims scored significantly higher than outsiders. The other groups did not differ (for mean scores and standard deviations see Table 15). The cyberbullying groups also differed in rumination ($F [3, 502] = 4.39, p = .01, \eta_p^2 = .03$). According to the Bonferroni-corrected post-hoc tests cybervictims scored significantly higher than cyberbullies and outsiders. The other groups did not differ (for mean scores and standard deviations see Table 15). There was also significant difference between the cyberbullying groups in other blame ($F [3, 502] = 3.61, p = .01, \eta_p^2 = .02$). As reported by the Bonferroni-corrected post-hoc tests bully-victims scored significantly higher than cybervictims. The other groups did not differ in other blame (for mean scores and standard deviations see Table 15). The cyberbullying groups differed in acceptance ($F [3, 502] = 3.31, p = .02, \eta_p^2 = .02$) as well. According to the Bonferroni-corrected post-hoc tests victims scored significantly higher than cyberbullies. The other groups did not differ significantly (for mean scores and standard deviations see Table 15). Furthermore, there was significant difference between the cyberbullying groups in planning ($F [3, 502] = 3.40, p = .02, \eta_p^2 = .02$). As reported by the Bonferroni-corrected post-hoc tests cybervictims scored significantly higher than cyberbullies. The other groups did not differ (for mean cores and standard deviations see Table 15).

Table 15. Results of MANOVAs in the second study

O: outsiders, V: victims, B: cyberbullies, B/V: bully-victims

* $p < .05$, ** $p < .01$

	Outsiders (<i>n</i> =390) M (SD)	Victims (<i>n</i> =71) M (SD)	Perpetrators (<i>n</i> =36) M (SD)	Bully- victims (<i>n</i> =27) M (SD)	F	df	η_p^2	Significant Post Hoc
Self-blame	10.21 (3.48)	11.65 (3.71)	10.03 (3.58)	10.00 (2.76)	3.66*	3, 502	.02	V-O
Acceptance	11.16 (3.35)	11.99 (3.53)	9.97 (3.13)	11.89 (2.46)	3.31*	3, 502	.02	V-B
Rumination	11.49 (4.01)	13.14 (3.90)	10.74 (3.95)	11.00 (3.63)	4.39**	3, 502	.03	V-B, V-O
Positive refocusing	10.91 (4.02)	10.82 (4.69)	10.66 (4.41)	10.85 (4.38)	0.05	3, 502	.00	-
Planning	13.25 (3.67)	14.32 (3.51)	12.03 (4.09)	13.74 (3.31)	3.40*	3, 502	.02	V-B
Positive reappraisal	12.03 (3.82)	12.00 (3.87)	10.91 (4.11)	12.07 (3.37)	0.92	3, 502	.01	-
Putting into perspective	11.29 (3.48)	11.45 (3.68)	10.14 (3.32)	11.63 (3.48)	1.37	3, 502	.01	-
Catastrophizing	8.05 (3.52)	8.34 (3.24)	8.06 (2.74)	8.04 (3.39)	0.14	3, 502	.00	-
Other blame	8.48 (2.84)	8.01 (2.45)	9.23 (3.91)	9.93 (2.83)	3.61*	3, 502	.02	B/V-V
Affective empathy	12.40 (2.69)	12.38 (2.45)	10.80 (2.51)	10.56 (2.10)	7.78**	3, 502	.04	V-B, V-B/V, O-B, O-B/V
Cognitive empathy	7.41 (1.37)	7.89 (1.27)	6.77 (1.80)	6.74 (1.68)	7.14**	3, 502	.04	V-B, V-B/V
Intention to comfort	13.06 (2.04)	12.94 (1.71)	11.46 (2.59)	11.74 (2.33)	9.35**	3, 502	.05	V-B, O-B/V, O-B
Moral disengagement	13.07 (3.74)	12.44 (4.15)	16.63 (4.32)	18.56 (4.19)	26.32**	3, 502	.14	B-V, B-O, B/V-V, B/V- O

3.3.5. Determinants of cyberbullying perpetration and cybervictimization.

Based on the results of Pearson correlations (see Table 13) we conducted two linear regression analyses with stepwise extension to discover which variables could predict cyberbullying perpetration and cybervictimization. According to the results of the linear regression analyses, moral disengagement ($\beta = .41, p < .001$), intention to comfort ($\beta = -.14, p < .001$), and other blame ($\beta = .09, p = .02$) accounted for 1% of the variance in cyberbullying perpetration ($F[1, 513] = 5.55, p = .02$). The final model of cyberbullying perpetration could account for 21% of the variability ($F [1, 515] = 136.24, p < .001$). Moral disengagement ($\beta = .46, p < .001$) was found to have the most influential, significant effect on cyberbullying perpetration (for detailed results see Table 16). Further, self-blame ($\beta = .11, p = .02$), cognitive empathy ($\beta = .12, p = .01$), age ($\beta = .12, p = .01$), and acceptance ($\beta = .11, p = .02$) accounted for 1% of the variance in cybervictimization ($F[1, 509] = 5.43, p = .02$). The final model of cybervictimization could account for 3% of the variability ($F [1, 512] = 17.25, p < .001$). Self-blame ($\beta = 0.18, p < .001$) was found to have the most influential, significant effect on cybervictimization (for detailed results see Table 17).

Table 16. Results of linear regression analyses with stepwise extension with cyberbullying perpetration as dependent variable

* $p < .05$, ** $p < .01$

Model 1	R²	F	df	Beta	t
Moral disengagement	.21	136.24**	1,515	.46**	11.67
Model 2	R²	F	df	Beta	t
Moral disengagement	.02	12.11**	1,514	.43**	10.73
Intention to comfort				-.14**	-3.48
Model 3	R²	F	df	Beta	t
Moral disengagement	.01	5.55*	1,513	.41**	10.33
Intention to comfort				-.14**	-3.55
Other blame				.09*	2.36

Table 17. Results of linear regression analyses with stepwise extension with cybervictimization as dependent variable

*p<.05, **p<.01

Model 1	R²	F	df	Beta	t
Self-blame	.03	17.25**	1,512	.18**	4.15
Model 2	R²	F	df	Beta	t
Self-blame	.02	8.79**	1,511	.16**	3.51
Cognitive empathy				.13**	2.97
Model 3	R²	F	df	Beta	t
Self-blame	.01	6.64*	1,510	.15**	3.50
Cognitive empathy				.13**	2.87
Age				.11*	2.58
Model 4	R²	F	df	Beta	t
Self-blame	.01	5.43*	1,509	.11*	2.44
Cognitive empathy				.12*	2.67
Age				.12*	2.73
Acceptance				.11*	2.33

3.4. Discussion

The main goal of our study was to clarify the roles of empathy, emotion regulation and moral disengagement in cyberbullying perpetration and cybervictimization. Understanding the specific roles of socio-emotional skills can help to understand the dynamics behind cyberbullying and may serve as evidence for SEL based prevention and intervention programs. Our results demonstrated a pattern of socio-emotional skills underlying cybervictimization and cyberbullying perpetration. We showed that older adolescents are more likely to be cybervictimized and that cybervictims do not lack empathic skills. Further, they regulated their emotions in both adaptive and maladaptive ways. Moreover, moral disengagement characterized cyberbullies and bully-victims whereas they had difficulties with understanding others' emotions and perspective.

Our first hypothesis was that cybervictims have the same problems concerning empathic skills as cyberbullies. However, our results demonstrated that cybervictims and cyberbullies differ in empathic competences. This is in line with previous findings (Ang & Goh, 2010; Brewer & Kerslake, 2015; Del Rey et al., 2016; Steffgen, et al., 2009, 2011) showing that cyberbullies are unable to take others' perspective or feel vicarious emotions. In contrast, cybervictims did not show the same deficit in affective and cognitive empathy, or intention to comfort. Cybervictims

were more focused on others' distress and had a stronger tendency to help others than cyberbullies and bully-victims. Whereas, cyberbullies and bully-victims are similar in their incapacity of empathizing with others. As we know the roles in cyberbullying engagement are fluid (DeSmet et al., 2014; DeSmet et al., 2016; Van Cleemput et al., 2014), so this result can serve as an explanation why bully-victims are engaged in cyberbullying as both perpetrators and victims. Bully-victims' difficulties in understanding others' emotions and perspective can be a risk factor why after cybervictimization, instead of adaptively coping with their negative experiences, bully-victims turn to cyberbullying. Whereas, cybervictims' better empathic skills can be a protective factor against their subsequent cyberbullying perpetration. Also, such social sensibility could be an antecedent of cybervictimization. On the other hand, bully-victims could have been acting as cyberbullies first, as well. As they are not able to empathize with the victim, they are likely to repeat their cyberbullying acts, not being aware of the harm they are causing. Their subsequent victimization can be a consequence of others picking on them because of their aggressive and harmful behaviour on the Internet and social media sites. However, because of the cross-sectional nature of this study we have no information on the direction of the causality. In all, further longitudinal research could help to understand more about the role of empathy and the fluidity regarding the roles taken in cyberbullying incidents. As well as, our results support the usage of SEL in anti-cyberbullying programs because empathy could serve as a base for these programs to help prevent cybervictims' subsequent cyberbullying behaviour and to prevent cyberbullies' repeated aggressive acts, thus preventing their subsequent cybervictimization.

Our second hypothesis was that moral disengagement plays a crucial role in cyberbullying. We showed that moral disengagement is indeed associated with cyberbullying perpetration. This is consistent with previous studies (Bussey, et al., 2015; Renati et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016) showing a link between cyberbullying and the use of moral disengagement strategies. A previous study (Renati et al., 2012) found that only cyberbullies are characterized by affective empathy deficit and heightened use of moral disengagement. In contrast, our results showed that moral disengagement characterized not only cyberbullies but also bully-victims. Cyberbullies and bully-victims used these strategies more often compared to cybervictims and outsiders. The usage of the moral disengagement strategies is another similarity between these two groups besides their lower capability to understand other people's emotions and perspective. An explanation may be that cyberbullies and bully-victims disengage from moral standards in the absence of certain socio-emotional skills. They are unable to

understand others' emotions and their own affective states. Without these socio-emotional skills, cyberbullies and bully-victims will use alternative strategies to regulate their negative emotions. Further, bully-victims used other blame as an emotion regulation strategy that is also a way of moral disengagement such as attribution of blame and dehumanization. Consequently, the inclusion of moral disengagement in prevention and intervention programs could help youngsters, cyberbullies, and bully-victims to learn how to manage their feelings subsequent of their morally questionable acts without using justifying strategies.

The third aim of the current study was to find the specific emotion regulation strategies that characterize cybervictims. Previous results showed that both cyberbullies and cybervictims are unable to adaptively regulate emotions (Baroncelli & Ciucci, 2014; Giancesini & Brighi, 2015), our results showed specific emotion regulation strategies characterizing both cybervictims and cyberbullies, and even bully-victims. Besides lack of empathic skills and usage of moral disengagement strategies, cyberbullies and bully-victims were also found to be similar regarding the emotion regulation strategy they are using, i.e. other blame. Both cyberbullies and bully-victims use other blame to regulate their negative emotional states. If thinking about the fluidity of cyberbullying roles, the usage of maladaptive emotion regulation can serve to understand the dynamics, however because of the cross-sectional nature of the study we cannot now the direction of causality. On one hand other blame can explain why cybervictims become cyberbullying perpetrators as according to the Cyclic Process Model (den Hamer & Konijn, 2016) there is a risk of using maladaptive emotion regulation strategies for cybervictims to deal with their anger and distress. As a consequence of using maladaptive emotion regulation strategies, another risk of becoming a cyberbully emerges for cybervictims. Indeed, other blame may be the maladaptive emotion regulation strategy underlying cybervictims' cyberbullying perpetration. On the other hand, if cyberbullies are unable to regulate their emotions effectively and use maladaptive emotion regulation strategies, i.e. other blame, it can result in repeated acts of cyberbullying perpetration. As a consequence of their aggressive online behaviour, others may behave aggressively towards them, resulting in their cybervictimization. Although, further, preferably longitudinal research is needed to understand this dynamic of cyberbullying. Our results also showed the specifics of cybervictims' emotion regulation: Cybervictims used a set of adaptive and maladaptive emotion regulation strategies, e.g. rumination, self-blame, acceptance and planning, compared to cyberbullies and outsiders. One possible explanation could be that cybervictims first use maladaptive emotion regulation strategies but then they switch to using adaptive ones. This shifting might be the result of their better empathic skills,

or they receive social support helping them to regulate their distress adaptively. Furthermore, self-blame had a predictive role in cybervictimization. Although, to fully understand the underlying dynamics and the temporal aspect of the results further research is needed.

Some limitations of our study shall be noted. First, although anonymity should have lowered the risk of socially desirable answers, adolescents might have underreported their involvement in cyberbullying. On account of opportunity sampling, our sample was not representative of the Hungarian adolescent population, consequently our results cannot be generalized for the Hungarian adolescent population. Further, it is important to be noted that the estimates of partial eta squared are weak, though the multivariate analysis of variance showed significant differences between the cyberbullying groups. Moreover, on account of the cross-sectional design of our study we could not test whether cybervictims regulate their emotions first by negative emotion regulation strategies and later shift to adaptive regulation. Without longitudinal data we can only hypothesize the temporal change in the use of cybervictims' affect regulation. The estimates of linear regression analysis were also weak in cybervictimization. This probably means that there are other variables that have a bigger influence in cybervictimization. On the other hand this can be a consequence of older adolescents being more likely involved as cybervictims and characterized by the variables but in this analyses the whole sample was used. Further, the reliability scores of the questionnaires measuring empathy, cognitive emotion regulation strategies, and moral disengagement were also quite low. This means that the results regarding these scales should be interpreted carefully. Further, the low reliability could also affect the estimates of partial eta squared. Also, our research did not include traditional bullying that could have been informative being highly correlated with cyberbullying. Finally, we used an unpublished scale to measure cyberbullying engagement that was the abbreviated version of the psychometrically objectionable CVBS-HU.

Overall, our results demonstrated the importance of empathy, emotion regulation strategies and moral disengagement in both cyberbullying perpetration and cybervictimization. Further, we showed evidence that older adolescents (17-19 years olds) are more likely to be cybervictimized than younger adolescents. An interesting outcome of this study was that cybervictims used both adaptive and maladaptive emotion regulation strategies. Moreover, cybervictims were able to understand others' emotions and perspective. Both of these results are worth further research to help understand why adolescents are victimized on the Internet and how they can be helped to adaptively overcome the consequences of cyberbullying. In addition, cyberbullies and bully-victims used moral disengagement strategies to justify their aggressive online behaviour

whereas they lacked empathic skills. Based on our results, decreasing the degree of using moral justification, cyberbullies and bully-victims may be capable of learning how to understand others' and their own affective states. Consequently, our results may serve as evidence for the use of SEL theory in anti-cyberbullying prevention and intervention programs. Higher levels of affective and cognitive empathy, intention to comfort others and adaptive emotion regulation could be protective factors against cyberbullying.

4. THIRD STUDY – RISK AND PROTECTIVE FACTORS IN CYBERBULLYING: THE ROLE OF FAMILY, SOCIAL SUPPORT AND EMOTION REGULATION³

4.1. Introduction

The effect of family and peers is crucial during the course of adolescence as they influence both adolescents' developing socio-emotional skills and behaviour (Eberly & Montemayor, 1998; Henry et al., 1996; Laible, 2007; Laninga-Wijnen et al., 2018; Olson et al., 1979; Padilla-Walker et al., 2016; Steinberg & Silk, 2002; You & Kim, 2016). Consequently, family relationships, adaptation to the changes during adolescence, family communication, perceived social support from family and friends might influence adolescents' cyberbullying engagement as well. Thus in the third study, our aim was to explore the direct and indirect effects (via emotion regulation) of family functioning and perceived social support from family and friends on cyberbullying engagement.

4.1.1. The Role of Social Support in Cyberbullying Involvement.

Past studies have shown that social support might be an effective protective factor in mitigating the negative consequences associated with cyberbullying (Cho & Yoo, 2017; Hellfeldt et al., 2020; Olenik-Shemesh & Heiman, 2016). Social support is seen as a coping source provided by one's interpersonal relationships, that can help to endure stressful situations and to buffer against the negative effects of these (Cooke et al., 1988; Hirsch, 1981; McCubbin et al., 1980; Zimet et al., 1988). More specifically, family and peer support play an important role in the process whether adolescents are able to cope with cyberbullying and to reduce the associated harmful effects of cyberbullying and to seek help (Banerjee et al., 2010; Mesch, 2009; Thompson & Smith, 2011). Previous studies demonstrated that both parental and peer social support can affect youngsters' aggressive emotional impulses (Dodge et al., 2006; Jenkins & Demaray, 2012; Lopez et al., 2008; Shahar & Henrich, 2016) and their cyberbullying involvement (Baldry et al., 2015; Bayraktar et al., 2015; Calvete et al., 2010; Fanti et al., 2012; Fridh et al., 2015; Heerde & Hemphill, 2017; Kowalski et al., 2014; Martins et al., 2016; Solecki et al., 2014; Wang et al., 2009; Williams & Guerra, 2007). The poor perceived peer support increases the likelihood of involvement in both cyberbullying perpetration (Calvete et

³ This subchapter is based on the following, accepted but not yet published manuscript: *Arató N., Zsidó A. N., Rivnyák A., Péley B., & Lábadi B. (n.d.) Risk and Protective Factors in cyberbullying: The role of family, social support and emotion regulation under review in *International Journal of Bullying Prevention**

al., 2010; Baldry et al., 2015; Bayraktar et al., 2015; Fanti et al., 2012; Heerde & Hemphill, 2017) and cybervictimization (Baldry et al., 2015; Fridh et al., 2015; Kowalski et al., 2014; Williams & Guerra, 2007). Similar effect was observed with the perceived social support from family, the perception of poor parental support is strongly associated with both cyberbullying perpetration (Calvete et al., 2010; Fanti et al., 2012; Solecki et al., 2014; Wang et al., 2009) and cybervictimization (Fanti et al., 2012; Fridh et al., 2015; Kowalski et al., 2014; Martins et al., 2016; Williams & Guerra, 2007). In sum, poor peer and family support seem to be risk factors of cyberbullying involvement. However, the family factors can be further specified, as not only the support from the family but also the relationships among family members, the family's adaptation skills, and the communication patterns of the family offer information on a family's functioning and influence (Olson, 2000).

4.1.2. The Role of Family Communication, Cohesion and Adaptability in Cyberbullying Involvement.

Recently, many studies have begun to investigate how family variables affect adolescents' subsequent involvement in cyberbullying behaviours. Such a family variable is family communication that provides information on the family members' listening and speaking skills, self-disclosure, respect, and regard (Olson, 2000). The family communication plays a role in preventing cyberbullying, both in terms of perpetration and victimization. Positive, open and empathetic family communication seems to be a protective factor and reducing the risk of involvement in cyberbullying behaviours (Buelga et al., 2017; Buelga et al., 2016; Cross et al., 2015; Fanti et al., 2012; Mesch, 2009; Perren et al., 2012). Whereas, negative, offensive, and avoidant communication increases the risk of both cyberbullying perpetration and cybervictimization (Buelga et al., 2017; Buelga et al., 2016; Elgar et al., 2014; Larranga, et al., 2016). There is also an agreement among the findings derived from studies on family cohesion (Buelga et al., 2017; Ortega-Barón et al., 2016). Family cohesion is '*the emotional bonding that family members have towards one another*' (Olson, 2000, pp. 145). Poor, dysfunctional, conflictual family relationships and lack of emotional link among family members increase the problems of social adjustment during adolescence, which contributes to the odds of engagement in cyberbullying perpetration (Buelga et al., 2017; Hemphill & Heerde, 2014; Ybarra & Mitchell, 2004). Likewise, family cohesion is also a considered predictor of cybervictimization, adolescents becoming victims tend to obtain lower scores on family cohesion scales (Ortega-Barón et al., 2016). Relatively, little is known about the relationship between family adaptability and cyberbullying. Adaptability is a '*family's ability to change its power structure,*

role relationships and rules' (Place et al., 2005, pp. 215.) in response to the adolescent member's developmental needs. It seems that the characteristics of family adaptability may affect youngsters' aggressive behaviour (Steinberg, 2000). Indeed, if the family's hierarchical system, rules, and roles do not change accordingly to the developmental changes and needs of the adolescent member, it may increase the likelihood of adolescents' delinquent (Cashwell & Vacc, 1996), as well as aggressive behaviour (Pérez-Fuentes et al., 2019). In sum, the growing body of studies investigating the role of the dynamic family variables have found evidence that the family communication and family cohesion are deeply associated with the adolescents' cyberbullying behaviour. These studies have not explored the role of mediating factors, however there is a possibility that there are factors that mediate the link between the family and the peer variables and cyberbullying involvement. The investigation of mediating variables could offer statistical advantages, e.g. the bootstrap approach provides greater statistical power (Mackinnon et al., 2004) and deeper understanding about the underlying dynamics (Baron & Kenny, 1986). Such a mediating variable that may carry the effect of peer and family factors, might be emotion regulation that has already been shown to be having an effect on cyberbullying engagement.

4.1.3. The Influence of Emotion Regulation on Cyberbullying Involvement.

Previous research shows that involvement in cyberbullying is associated more broadly with emotion regulation during adolescence (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Giancesini & Brighi, 2015). Emotion regulation is a socio-emotional skill that is needed for successful social relationships (Gross & John, 2003), social competence (Eisenberg & Fabes, 1992), psychological well-being (Quidbach et al., 2010) and regulating aggressive tendencies (Robertson et al., 2012). Negative and maladaptive emotion regulation strategies increase the risk of becoming both a perpetrator of cyberbullying (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Giancesini & Brighi, 2015) and a cybervictim (Giancesini & Brighi, 2015; Vranjes et al., 2018). Additionally, the relationship between emotion regulation strategies and the dynamics of cyberbullying might produce a vicious circle as the Cyclic Process Model (den Hamer & Konijn, 2016) suggested: If cybervictimized youngsters use maladaptive emotion regulation strategies to cope with the negative emotions following cyberbullying incidents, this maladaptive coping enhances the likelihood of their subsequent cyberbullying behavior on the Internet (den Hamer & Konijn, 2016). However, emotion regulation may not only have a direct link with cyberbullying: It may serve as the mediating factor between social factors and

cyberbullying involvement, since its development is associated with both peer and family factors during adolescence.

4.1.4. Emotion Regulation as a Possible Mediating Factor.

As peer relationships become more important during adolescence, adolescents have an impact on each other's developing emotion regulation (Steinberg & Silk, 2002). The association between emotion regulation and peer relationships is twofold: Emotion regulation influences adolescents' social competences and functioning (Eisenberg & Fabes, 1992; Gross & John, 2003), as well as the development and maintenance of peer relationships (Sroufe et al., 1984). Also, adolescents might seek support from peers in emotionally distressing situations as a means of emotion regulation strategies (Gottman & Mettetal, 1986). Further, youngsters regulate the intensity of the expression of emotions strategically to enhance the access to this social support (Dunn & Brown, 1991). Through this mechanism, peers have an effect on the success or failure of emotion regulation strategies. Since there is supporting evidence on both the developmental link between peer support and emotion regulation and peer support's association with cyberbullying involvement (Cho & Yoo, 2016; Hellfeldt et al., 2020; Olenik-Shemesh & Heiman, 2016), emotion regulation may possibly mediate the relationship between peer support and cyberbullying involvement.

Further, children who grow up in a dysfunctional family with low emotional communication are not given with a model of how to accurately understand and respond to emotional situations. These children are not encouraged to verbalize and display their feelings in an adaptive way, therefore they do not learn understanding and regulating their own emotions (Eisenberg et al., 1998; Rutherford et al., 2015). However parents set the groundwork for emotion regulation across childhood, in adolescence the family still influences youngsters' emotion regulation. For example, the way how parents balance between their supervision and the adolescents' greater needs for autonomy, is a guide for interpreting and determining how to regulate their feelings (Morris et al., 2007). Based on this developmental link and the studies' (Banerjee et al., 2010; Mesch, 2009; Thompson & Smith, 2011) results showing supporting evidence on the role of parental factors in adolescents' coping with the emotional consequences of cyberbullying, emotion regulation may serve as the mediating factor that carries the effect of family factors on cyberbullying involvement.

4.1.5. Aim and Hypotheses.

Taken together, the above research suggests that family and peer factors - particularly those associated with emotions and communication - may influence both cyberbullying perpetration and cybervictimization. Further, there is an established link between cyberbullying involvement and youth emotion regulation. Although it is unclear, whether emotion regulation would act as a mediator in the relationship between family functioning, peer support and adolescent cyberbullying involvement. The goal of our study was to examine the direct and indirect effects, through emotion regulation difficulties, of family functioning factors (cohesion, adaptability and communication), perceived emotional parental and peer support in cyberbullying involvement. We tested models of cyberbullying perpetration and cybervictimization using these variables. First, we hypothesized that maladaptive family adaptability, unbalanced levels of family cohesion and conflictual communication style among family members increased the risk of both cyberbullying perpetration and cybervictimization. In addition, we assumed that these family characteristics had both a direct and an indirect effect on both cyberbullying perpetration and cybervictimization through emotion regulation difficulties. Additionally, we also hypothesized that perceived emotional peer and parental social support had an effect on cyberbullying involvement: poor peer and parental support led to both cyberbullying perpetration and cybervictimization. At last, we expected that poor emotional parental and peer support also had a direct and an indirect effect with the mediating role of emotion regulation difficulties on both cyberbullying perpetration and cybervictimization.

4.2. Materials and Methods

4.2.1. Participants.

One thousand, one hundred and thirty secondary school students participated in the study (561 men, 569 women, age range= 11-19 years, mean age=15.23, SD=1.71). However, 25 participants were removed from the database because of missing data. After the removal, 1105 students' (552 men, 553 women) data was analysed in the study, they were aged between 11 and 19 years (mean age=15.21, SD=1.71). 1.7% of the participants were living in the capital, 9.1 % were living the chief town of a county, 57 % were living in rural cities, and 32.1% were living in villages. 54.3% of the students were attending a high school, 12 % were attending vocational school, 1.7% were attending technical college, and 22.9% were attending elementary school. In case of 9% of the participants, there were no information on the type of school. It is important to note that the sample was not representative of the country's adolescent population.

Ethical approval in conducting this study was granted from the Hungarian United Ethical Review Committee for Research in Psychology (reference number: 2019-99).

4.2.2. Materials.

We used quantitative correlational design by means of four anonymous self-report questionnaires (For the mean scores, standard deviations and Cronbach's Alphas see Table 18):

The European Cyberbullying Intervention Project Questionnaire (ECIPQ, Del Rey et al., 2015 trans. Arató et al., 2019, see Appendix 5) measures both cyberbullying perpetration and cybervictimization. It includes the cyberbullying criteria of repetition and the imbalance of power. The questionnaire measures cyberbullying perpetration with 11 items, e.g. '*I said nasty things to someone or called them names using texts or online messages*' and it also measures cybervictimization with 11 items, e.g. '*Someone said nasty things to me or called me names using texts or online messages*'. Participants answered on a 5-point Likert scale (0=never, 1=once or twice, 2=once a month, 3=once a week, 4=more times a week) to indicate how often they engage in cyberbullying behaviours or become victims of it. Higher scores meant that the participants engaged in cyberbullying more frequently. The original questionnaire was psychometrically tested with participants aged between 11 and 23 years in six European countries, showing adequate reliability (Cronbach's α of the cyberbullying perpetration factor = .93; Cronbach's α of the cybervictimization factor = .97; Del Rey et al., 2015). Both scales showed an adequate reliability on our sample as well (Cronbach's α of the cyberbullying perpetration factor = .91; Cronbach's α of the cybervictimization factor = .90).

The Difficulties in Emotion Regulation Questionnaire (DERS, Gratz & Roemer, 2004 trans. Kökönyei, 2008, see Appendix 12) evaluates difficulties in emotion regulation consisting of 36 items. The DERS measures difficulties in the following aspects of emotion regulation: (a) acceptance of emotions (non-acceptance); (b) ability to engage in goal-directed behaviour when experiencing negative emotions (goals); (c) refraining from impulsive behaviour (impulse); (d) awareness of emotions (awareness); (e) accessing effective emotion regulation strategies when experiencing negative emotions (strategies); (f) understanding of emotions (clarity). Participants answered on a 5-point Likert scale (1=almost never, 0-10%; 2=sometimes, 11-35%; 3=about half the time, 36-65%; 4=most of the time, 66-90%; 5=almost always, 91-100%) to indicate how often the different emotion regulation difficulties characterize them. If participants scored high on the subscales, it meant that they had difficulties regulating their emotions during distressing times. The original questionnaire was psychometrically analysed

with participants aged between 18 and 55 years, all the subscales showing adequate reliability (Cronbach's α of nonacceptance = .85, Cronbach's α of goals = .89, Cronbach's α of impulse = .86, Cronbach's α of awareness = .80, Cronbach's α of strategies = .88, Cronbach's α of clarity = .84; Gratz & Roemer, 2004). The DERS subscales showed adequate or near adequate reliability on our sample as well (Cronbach's α of nonacceptance = .86, Cronbach's α of goals = .82, Cronbach's α of impulse = .83, Cronbach's α of awareness = .77, Cronbach's α of strategies = .87, Cronbach's α of clarity = .77).

The Family Adaptability and Cohesion Evaluation Scale IV. (FACES IV, Olson, 2011 trans. Vargha & Tóth, 2008, see Appendix 13) is a self-report measure to assess the following family dimensions: cohesion, flexibility, communication and satisfaction consisting of 62 items. The FACES IV assesses balanced cohesion and flexibility as well as the high and low extremes of both cohesion (enmeshed and disengaged) and flexibility (rigid and chaotic). Participants answer on a five-point Likert scale (1=strongly disagree; 2=generally disagree; 3=undecided; 4=generally agree; 5=strongly agree). Higher scores on the subscales meant that the specific family functioning type (e.g. enmeshed family cohesion) characterized the participants' family. Moreover the FACES IV contains two additional scales: Family Communication Scale and Family Satisfaction Scale. Both scales consist of 10 items and participants implied on a five-point Likert scale (1=very dissatisfied; 2=somewhat dissatisfied; 3=generally satisfied; 4=very satisfied; 5=extremely satisfied) to what extent they are satisfied with the functioning of the family and communication among family members. Higher scores on these two scales meant that the participants were satisfied with the family's communication style and with their family's overall functioning. The original scale was psychometrically tested with a sample aged between 18 and 59 showing adequate reliability for all the subscales (Cronbach's α of enmeshed cohesion = .77, Cronbach's α of disengaged cohesion = .87, Cronbach's α of balanced cohesion = .89, Cronbach's α of chaotic adaptability = .86, Cronbach's α of balanced adaptability = .84, Cronbach's α of rigid adaptability = .82; Olson, 2011). However, there were previous studies (Baiocco et al., 2013; Koutra et al., 2013) that adapted the scale with adolescents. In both studies lower than adequate reliability scores were found for the subscales: Baiocco and colleagues (2013) found reliability scores ranging from .63 to .73, disengaged showing the lowest score. Whereas in Koutra and colleagues' study (2013) the reliability scores ranged from .59 to .79, enmeshed cohesion showing the lowest reliability score. Most of the subscales showed adequate or near adequate reliability in our sample (Cronbach's α of disengaged cohesion = .77, Cronbach's α of balanced cohesion = .83, Cronbach's α of chaotic adaptability = .72,

Cronbach's α of balanced adaptability = .78, Cronbach's α of rigid adaptability = .73, Cronbach's α of communication = .85, Cronbach's α of satisfaction = .93) but one scale, i.e. enmeshed cohesion, showed lower reliability (Cronbach's α = .67).

The Multidimensional Scale of Perceived Social Support (MSPSS, Zimet et al., 1988 trans. Papp-Zipernovszky et al., 2017, see Appendix 6) is a 12-item scale that assesses perceived support from three sources: family, friends and significant other. Participants answered on a seven-point Likert scale (1=very strongly disagree; 7=very strongly agree) to indicate the level of perceived social support from the different sources. The higher scores meant that the participant perceived higher levels of social support from friends, family and/or significant other. The original scale was tested psychometrically with adolescents showing adequate reliability (Cronbach's α of family = .81, Cronbach's α of friends = .92, Cronbach's α of significant other = .83; Zimet et al., 1990). The scale showed adequate reliability scores on our sample as well (Cronbach's α of family = .92, Cronbach's α of friends = .91, Cronbach's α of significant other = .88).

4.2.3. Procedure.

After the ethical approval was granted, the study was taking place in the second semester of the 2018/19 school year. The population of the study was Hungarian secondary school students, so we have sent out e-mails with our research proposal to 12 secondary schools. Nine schools agreed to participate in the research, but in the end only seven schools' students participated in the study. The choice of schools was based on accessibility and the university's connections. After the school principal agreed to participate in the study, the schools' head teachers were informed that they could volunteer to participate in the study with their classes. In two schools, no head teacher applied voluntarily. In the remaining seven schools, research assistants recruited students in the volunteer head teachers' classes during school hours. The recruitment included a short introduction about the study (e.g. what the topic of the research was, what they had to do during the research) and the research assistants handed out the parental consent forms. Volunteering students could participate in the study if their parents gave informed consent. The study was conducted during school hours in the students' classroom with the supervision of their teachers and/or our research assistants (undergraduate students, PhD students). The students completed the questionnaires anonymously by paper-pencil or online, via Google Forms after giving their informed consent to participate in the research.

4.2.4. Statistical Analysis.

IBM SPSS Statistics 23 was used to analyse, whereas IBM SPSS Amos 20 was used to conduct the path analyses.

We created four cyberbullying groups to see the frequency of cyberbullying involvement in our sample using the mean scores and standard deviations (for the mean scores and standard deviation see Table 1). Students were considered cyberbullies if they scored higher than the sum of the mean and one standard deviation on the cyberbullying perpetration scale of ECIPQ. Students scoring higher than the sum of the mean and one standard deviation on the cybervictimization scale of ECIPQ were considered cybervictims. Students scoring higher than the sum of the mean and one standard deviation on both cyberbullying and cybervictimization scales of the ECIPQ were considered bully-victims. At last, students who scored lower than the mean on both the cyberbullying perpetration and the cybervictimization scale of the ECIPQ were considered outsiders.

First, descriptive statistics were calculated (see Tables 18-20). The skewness and kurtosis values showed that some of the variables were not normally distributed, i.e. cyberbullying perpetration (ECIPQ), cybervictimization (ECIPQ), social support from friends, family and a significant other (MSPSS), disengaged family cohesion, balanced family cohesion, rigid family adaptability and chaotic family adaptability (FACES IV). Although, with large sample sizes (> 30 or 40) parametric procedures can be used even if the data violates the normality assumption (Altman & Bland, 1995; Elliott & Woodward, 2007; Ghasemi & Zahediasl, 2012). Consequently, first multivariate analysis of variance was used to explore whether there are differences between the age groups (11-13, 14-16 and 17-19 years olds) in cyberbullying perpetration and cybervictimization. Then, linear regression analyses with stepwise extension were used to find the variables that are significantly associated with cyberbullying perpetration and cybervictimization to include only these variables later, in the path analyses. A linear regression analyses with stepwise extension was conducted to determine the predictors of cyberbullying perpetration with difficulties in emotion regulation (non-acceptance, goals, impulse, awareness, strategies and clarity), perceived social support (friend and family support) and family functioning (enmeshed, disengaged and balanced cohesion, rigid, chaotic and balanced flexibility, communication and satisfaction) as independent variables. Another linear regression analyses with stepwise extension was used to test the predictors of cybervictimization as well with the same independent variables as previously. Based on the significant results of the linear regression analyses, path analyses were used to test models of

cyberbullying perpetration and cybervictimization. 95% confidence intervals and bootstrapping with 2000 resamples were used. According to Hu and Bentler (1999), the following criteria were used for the fitting indices: $\chi^2/df < 2$, RMSEA $< .06$, NFI $> .95$, TLI $> .95$, CFI $> .95$.

Table 18. Descriptive statistics of the third study

	Score Range	Mean score	Std. deviation	Cronbach's Alpha	Skewness (Std. error)	Kurtosis (Std. error)
Cyberbullying perpetration (ECIPQ)	0-44	12.79	5.27	.91	2.24(0.07)	14.53(0.15)
Cybervictimization (ECIPQ)	0-44	14.51	6.22	.90	1.55(0.07)	6.29(0.15)
Non-acceptance (DERS)	6-30	12.91	5.63	.86	0.81(0.07)	0.19(0.15)
Goals (DERS)	5-25	14.40	4.88	.82	0.12(0.07)	-0.67(0.15)
Impulse (DERS)	6-30	14.62	5.50	.83	0.51(0.07)	-0.40(0.15)
Awareness (DERS)	6-30	16.87	4.88	.77	0.25(0.07)	-0.16(0.15)
Strategies(DERS)	8-40	19.00	7.42	.87	0.62(0.07)	-0.30(0.15)
Clarity (DERS)	5-25	11.26	4.18	.77	0.43(0.07)	-0.37(0.15)
Enmeshed family cohesion (FACES IV)	7-35	14.81	4.18	.67	0.63(0.07)	0.85(0.15)
Balanced family cohesion (FACES IV)	7-35	28.24	4.94	.83	-1.15(0.07)	1.61(0.15)
Disengaged family cohesion (FACES IV)	7-35	13.51	4.59	.77	1.21(0.07)	1.99(0.15)
Rigid family adaptability (FACES IV)	7-35	16.01	4.80	.73	0.56(0.07)	1.05(0.15)
Balanced family adaptability (FACES IV)	7-35	25.33	5.12	.78	-0.59(0.07)	0.30(0.15)
Chaotic family adaptability (FACES IV)	7-35	12.68	4.45	.72	1.31(0.07)	2.73(0.15)
Family communication (FACES IV)	10-50	37.88	7.01	.85	-0.80(0.07)	0.63(0.15)
Family satisfaction (FACES IV)	10-50	36.19	8.58	.93	-0.61(0.07)	0.20(0.15)
Social support from friends (MSPSS)	4-28	23.55	4.86	.91	-1.52(0.07)	2.41(0.15)
Social support from family (MSPSS)	4-28	23.49	5.16	.92	-1.52(0.07)	2.12(0.15)
Social support from significant other (MSPSS)	4-28	25.16	4.19	.88	-2.04(0.07)	4.53(0.15)

Table 19. Descriptive data about the prevalence of the cyberbullying groups in gender and age groups in the third study

	Girls (n=553)	Boys (n=552)	11-13 years olds (n=186)	14-16 years olds (n=678)	17-19 years olds (n=241)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Cyberbullying perpetration (ECIPQ)	12.38 (3.83)	13.20 (6.38)	12.99 (3.57)	12.64 (4.86)	13.07 (7.15)
Cybervictimization (ECIPQ)	14.67 (5.50)	14.35 (6.87)	15.02 (5.35)	14.29 (5.77)	14.74 (7.86)
	Prevalence – girls (%)	Prevalence – boys (%)	Prevalence – 12-14 years olds (%)	Prevalence - 15-16 years olds (%)	Prevalence - 17-19 years olds (%)
Cyberbullies	1.6	1.6	1.1	2.1	0.8
Cybervictims	9.2	4.9	9.1	6.0	8.3
Bully-victims	2.9	6.9	4.3	4.3	7.1
Outsiders	86.3	86.6	85.5	87.6	83.8

Table 20. Descriptive data of the cyberbullying groups' scores on the DERS, FACES IV, and MSPSS

	Cyberbullying Perpetrators (n=18) M(SD)	Cybervictims (n=78) M(SD)	Bully- victims (n=54) M(SD)	Outsiders (n=955) M(SD)
Cyberbullying perpetration (ECIPQ)	21.61(3.35)	13.92(2.29)	28.37(8.71)	11.65(3.27)
Cybervictimization (ECIPQ)	14.06(3.96)	25.14(5.22)	29.56(7.86)	12.80(3.73)
Non-acceptance (DERS)	10.78(5.53)	15.33(5.94)	16.76(5.69)	12.54(5.48)
Goals (DERS)	14.33(5.58)	16.61(5.26)	16.09(4.12)	14.12(4.82)
Impulse (DERS)	14.67(5.30)	17.64(5.61)	18.80(4.55)	14.14(5.38)
Awareness (DERS)	16.83(4.77)	17.49(4.95)	19.17(4.90)	16.69(4.85)
Strategies(DERS)	17.44(6.74)	24.42(8.54)	23.81(6.35)	18.31(7.11)
Clarity (DERS)	10.17(4.00)	13.26(4.59)	15.02(4.24)	10.91(3.99)
Enmeshed family cohesion (FACES IV)	14.22(4.58)	15.81(4.46)	17.07(5.18)	14.61(4.04)
Balanced family cohesion (FACES IV)	27.94(5.68)	27.41(5.84)	25.07(5.26)	28.50(4.77)
Disengaged family cohesion (FACES IV)	14.67(3.76)	14.87(5.34)	16.00(5.08)	13.23(4.45)
Rigid family adaptability (FACES IV)	14.89(5.09)	17.33(4.28)	17.56(5.03)	15.84(4.79)
Balanced family adaptability (FACES IV)	25.00(4.74)	23.69(6.10)	22.09(4.95)	25.65(4.96)
Chaotic family adaptability (FACES IV)	13.72(5.07)	14.60(5.46)	15.93(5.59)	12.32(4.16)
Family communication (FACES IV)	34.83(9.76)	35.90(8.73)	33.57(6.81)	38.34(6.68)
Family satisfaction (FACES IV)	36.17(8.48)	33.78(9.54)	33.52(8.37)	36.53(8.47)
Social support from friends (MSPSS)	23.78(4.33)	21.69(5.94)	19.83(6.13)	23.91(4.57)
Social support from family (MSPSS)	23.67(5.63)	21.08(6.62)	19.63(5.72)	23.90(4.83)
Social support from significant other (MSPSS)	26.22(2.78)	23.94(5.13)	21.11(5.62)	25.46(3.89)

4.3. Results

For the descriptive data, i.e. mean scores, standard deviations, reliability scores, skewness and kurtosis estimates see Table 18. Based on the created cyberbullying groups, 1.6% of the students were involved in cyberbullying as perpetrators, 7.1% were victims of cyberbullying, 4.9% were bully-victims and 86.4% were not involved in cyberbullying. Table 19 provides information about the prevalence of the cyberbullying groups in the gender groups and in the age groups (11-13, 14-16 and 17-19 years olds). Table 20 provides information on how the four cyberbullying groups (cyberbullying perpetrators, cybervictims, bully-victims and outsiders) scored on the scales (DERS, FACES IV, MSPSS).

According to the results of the multivariate analysis of variance, there was no significant difference between the age groups (11-13, 14-16 and 17-19 years olds) in cyberbullying perpetration ($F[2, 1102] = 0.77, p = .46, \eta_p^2 = .001$), neither in cybervictimization ($F[2, 1102] = 1.22, p = .30, \eta_p^2 = .002$). For the mean scores and standard deviation of the age groups see Table 19.

4.3.1. Determinants of Cyberbullying Perpetration.

According to the results of the linear regression analysis with stepwise extension, perceived friend support ($\beta = -.14, p < .001$), enmeshed ($\beta = .12, p < .001$) and balanced ($\beta = -.11, p < .001$) family cohesion, difficulties in refraining from impulsive behaviour ($\beta = .10, p = .001$) and in understanding of emotions ($\beta = .09, p = .01$) accounted for 1 % of the variance in cyberbullying perpetration ($F(1, 1099) = 7.11, p = .01$). Further, cyberbullying perpetration was most strongly affected by perceived friend support ($F(1, 1103) = 49.49, p < .001, \beta = -.21, p < .001$), which accounted for 4.3 % of the variance. (For more detailed results see Table 21).

4.3.2. Determinants of Cybervictimization.

According to the results of the linear regression analysis with stepwise extension, perceived support from friends ($\beta = -.11, p < .001$) and family ($\beta = -0.15, p < .001$), enmeshed family cohesion ($\beta = .14, p < .001$), difficulties in refraining from impulsive behaviour ($\beta = .10, p = .01$), in understanding of emotions ($\beta = .10, p = .003$) and in accessing effective emotion regulation strategies when experiencing negative emotions ($\beta = .10, p = .01$) accounted for 1 % of the variance in cybervictimization ($F(1, 1098) = 7.37, p = .01$). Further, difficulties in accessing effective emotion regulation strategies when experiencing negative emotions was most strongly

affecting cybervictimization ($F(1, 1103)=89.14, p< .001, \beta= .27, p< .001$), which accounted for 7.5 % of the variance. (For more detailed results see Table 22).

Table 21. Results of linear regression analyses with stepwise extension with cyberbullying perpetration as dependent variable and family factors, perceived social support and difficulties with emotion regulation as independent variables

*p<.05, **p<.01

Model 1	R²	F	df	β	t
Friend Support	.04	49.49**	1, 1103	-.21**	-7.04**
Model 2	R²	F	df	β	t
Friend Support	.02	27.79**	1, 1102	-.19**	-6.41**
Impulse				.16**	5.27**
Model 3	R²	F	df	β	t
Friend Support	.01	9.51**	1, 1101	-.19**	-6.31**
Impulse				.15**	5.03**
Enmeshed Cohesion				.09**	3.08**
Model 4	R²	F	df	β	t
Friend Support	.01	13.81**	1, 1100	-.15**	-4.72**
Impulse				.14**	4.65**
Enmeshed Cohesion				.12**	3.97**
Balanced Cohesion				-.12**	-3.72**
Model 5	R²	F	df	β	t
Friend Support	.01	7.11*	1, 1099	-.14**	-4.55**
Impulse				.10**	3.21**
Enmeshed Cohesion				.12**	3.93**
Balanced Cohesion				-.11**	-3.54**
Clarity				.09*	2.67*

Table 22. Results of linear regression analyses with stepwise extension with cybervictimization as dependent variable and family factors, perceived social support and difficulties with emotion regulation as independent variables

*p<.05, **p<.01

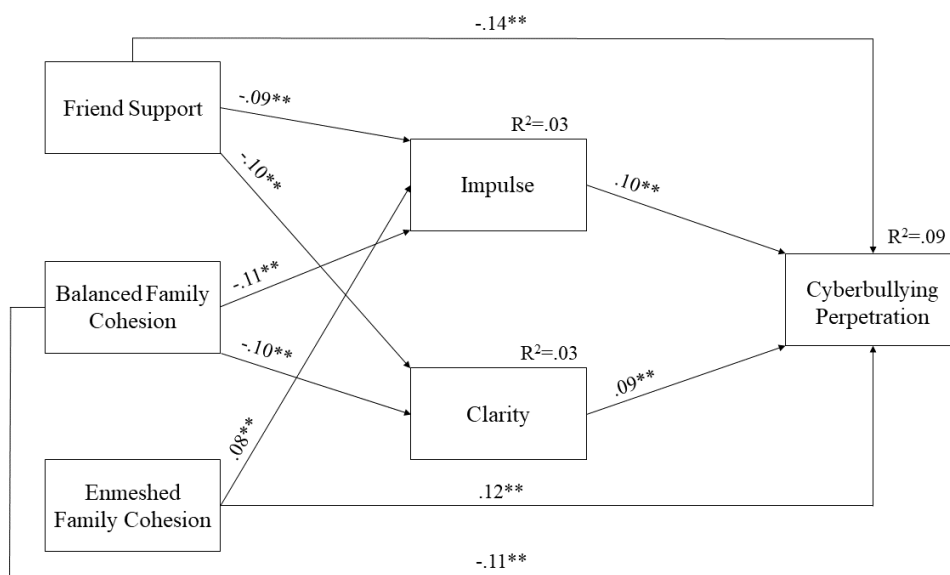
Model 1	R²	F	df	β	t
Strategies	.08	89.14**	1, 1103	.27**	9.44**
Model 2	R²	F	df	β	t
Strategies	.03	38.65**	1, 1102	.25**	8.65**
Friend Support				-.18**	-6.22**
Model 3	R²	F	df	β	t
Strategies	.01	15.24**	1, 1101	.19**	5.67**
Friend Support				-.17**	-5.94**
Clarity				.13**	3.90**
Model 4	R²	F	df	β	t
Strategies	.01	13.50**	1, 1100	.18**	5.37**
Friend Support				-.17**	-5.84**
Clarity				.13**	3.97**
Enmeshed Cohesion				.10**	3.68**
Model 5	R²	F	df	β	t
Strategies	.02	20.08**	1, 1099	.15**	4.57**
Friend Support				-.12**	-3.78**
Clarity				.11**	3.41**
Enmeshed Cohesion				.14**	4.72**
Family Support				-.15**	-4.48**
Model 6	R²	F	df	β	t
Strategies	.01	7.37**	1, 1098	.10*	2.54*
Friend Support				-.11**	-3.67**
Clarity				.10**	2.96**
Enmeshed Cohesion				.14**	4.66**
Family Support				-.15**	-4.55**
Impulse				.10**	2.72**

4.3.3. Model of Cyberbullying Perpetration.

The model, tested with path analysis, consisted of perceived social support from friends, balanced and enmeshed family cohesion as predictor variables, difficulties in refraining from impulsive behaviour and in understanding of emotions as mediating variables toward cyberbullying perpetration. The results show that the model fits the data well, $\chi^2(1)= 4.00$, $p= .05$, RMSEA= .05 (90% CI: .01; .11), NFI= .99, TLI= .92, CFI= .99. Enmeshed family cohesion ($\beta= .01$, $p< .01$, 95% CI= .002; .02), balanced family cohesion ($\beta= -.02$, $p< .001$, 95% CI= -.04; -.01), and perceived friend support ($\beta= -.02$, $p < .01$, 95% CI= -.04; -.01) had significant total indirect effects on cyberbullying perpetration. Figure 1 shows the standardized path coefficients and standardized R squared estimates. The relationships were significant, except for the association between enmeshed family cohesion and difficulties in understanding of emotions ($\beta= .06$, $p= .06$). The specific indirect effect of perceived friend support was mediated by difficulties in refraining from impulsive behaviour ($\beta= -.01$, $p= .01$). Perceived friend support also had a specific indirect effect on cyberbullying perpetration through difficulties in understanding of emotions ($\beta= -.01$, $p = .01$). The specific indirect effect of balanced family cohesion was also mediated by both difficulties in refraining from impulsive behaviour ($\beta= -.01$, $p< .01$) and difficulties in understanding of emotions ($\beta= -.01$, $p = .01$). The specific indirect effect of enmeshed family cohesion was mediated by difficulties in refraining from impulse behaviour ($\beta= .01$, $p< .01$).

Figure 5. Model of Cyberbullying Perpetration

* $p<.05$, ** $p<.01$

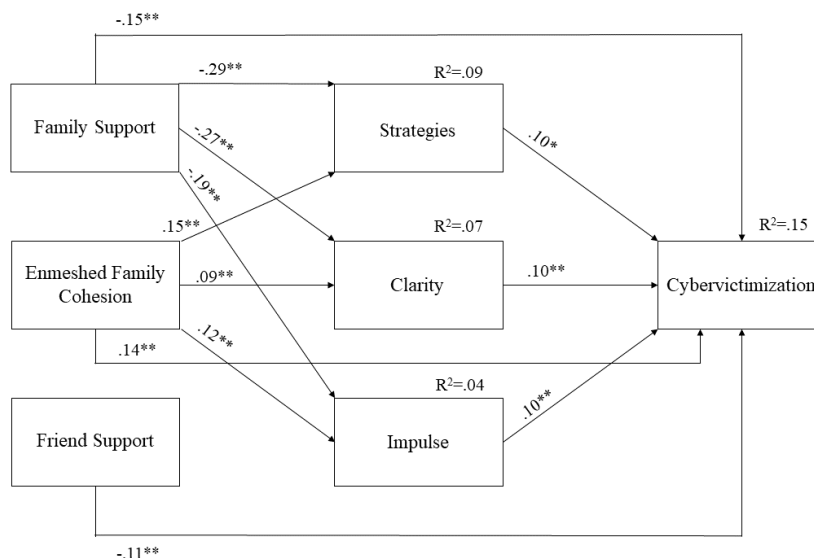


4.3.4. Model of Cybervictimization.

The model, tested with path analysis, consisted of perceived social support from friends and family, and enmeshed family cohesion as predictor variables, difficulties in refraining from impulsive behaviour, in understanding of emotions and in accessing effective emotion regulation strategies when experiencing negative emotions as mediating variables toward cybervictimization. The results show that the model fits the data well, $\chi^2(4)=5.72$, $p= .22$, RMSEA= .02 (90% CI: .00; .05), NFI= .99, TLI= .99, CFI= .99. Perceived support from family ($\beta= -.07$, $p= .001$, 95% CI= $-.11$; $-.05$) and enmeshed family cohesion ($\beta= .04$, $p< .001$, 95% CI= $.02$; $.06$) had a significant total indirect effect on cybervictimization. Perceived support from friends had only a direct effect on cybervictimization, as the relationship was insignificant between perceived friend support and difficulties in refraining from impulsive behaviour ($\beta= -.06$, $p= .10$), difficulties in accessing effective emotion regulation strategies when experiencing negative emotions ($\beta= -.03$, $p= .48$) and difficulties in understanding of emotions ($\beta= -.03$, $p= .30$). Figure 2 shows the standardized path coefficients and standardized R squared estimates. The specific indirect effect of perceived social support from family was mediated by difficulties in accessing effective emotion regulation strategies ($\beta= -.03$, $p= .01$), by difficulties in understanding of emotions ($\beta= -.03$, $p= .01$) and by difficulties in refraining from impulsive behaviour ($\beta= -.02$, $p= .01$). The specific indirect effect of enmeshed family cohesion was mediated by difficulties in accessing effective emotion regulation strategies when experiencing negative emotions ($\beta= .02$, $p< .01$), by difficulties in understanding emotions ($\beta= .01$, $p= .01$) and by difficulties in refraining from impulsive behaviour ($\beta= .02$, $p= .01$).

Figure 6. Model of Cybervictimization

* $p<.05$, ** $p<.01$



4.4. Discussion

The main goal of our study was to examine the role of family factors (cohesion, adaptability and communication), perceived parental and peer support and difficulties in emotion regulation on cyberbullying perpetration and cybervictimization. Our results supported models for both cyberbullying perpetration and cybervictimization: Enmeshed family cohesion, difficulties in refraining from impulsive behaviour and in understanding of emotions are risk factors for both cyberbullying perpetration and cybervictimization. Difficulties in accessing effective emotion regulation strategies when experiencing negative emotions is a risk factor for only cybervictimization. Further, perceived support from friends is a protective factor for both cyberbullying perpetration and cybervictimization. Perceived support from family is a protective factor for cybervictimization, whereas balanced family cohesion is a protective factor against cyberbullying perpetration. According to our results, family adaptability and communication have no role in cyberbullying perpetration and cybervictimization.

Enmeshed family cohesion is a risk factor for cyberbullying perpetration, it affected cyberbullying behaviour directly and also indirectly through difficulties in refraining from impulsive behaviour. Based on the results of earlier research (Buelga et al., 2017; Hemphill & Heerde, 2014; Morris et al., 2007; Ybarra & Mitchell, 2004), family relationships influence both the development of emotion regulation and involvement in cyberbullying behaviours. According to these results, poor, dysfunctional family relationships and lack of emotional link among family members contribute to cyberbullying perpetration (Buelga et al., 2017; Hemphill & Heerde, 2014; Ybarra & Mitchell, 2004). On the contrary, our results showed that a different type of family cohesion – enmeshed family cohesion - increased the chance of cyberbullying perpetration. In families with enmeshed family cohesion, there is an extreme amount of emotional closeness in the family, the family members are extremely dependent, and there is a lack of personal separateness, little private space. This pattern of family relationships also had a negative effect on the adolescents' impulse control and this emotion regulation difficulty contributed to cyberbullying behaviour. An explanation of this result might be that this closeness among family members is the result of a maladaptive adaptation from the family to the adolescent member's need for more autonomy and independence. Consequently, adolescents use the Internet as an escape from this dependence among family members, to practice control and autonomy. Our results also supported that balanced cohesion, when the family is able to adapt flexibly to the adolescent's needs and the adolescent is able to be both

independent from the family and connected to it, can be a protective factor against cyberbullying perpetration.

Enmeshed family cohesion is also a risk factor in cybervictimization. This type of family cohesion had direct effect and indirect effect through difficulties in refraining from impulsive behaviour, in understanding of emotions and in using effective emotion regulation strategies when experiencing negative emotions on cybervictimization. Previous studies demonstrated that balanced family cohesion might be a protective factor against cybervictimization (Ortega-Barón et al., 2016; Taiariol, 2010; Buelga et al., 2017), as well as emotion regulation was suggested to play a role in cybervictimization (Gianesini & Brighi, 2015). Our model also supported these previous results as the extreme emotional closeness and dependence among family members – an unbalanced form of family cohesion - made youngsters vulnerable to cyberbullying on the Internet and affected their emotion regulation development negatively. As in these types of families there are no boundaries, no private spaces, youngsters from these families might share videos, pictures, comments and personal information without boundaries on the Internet and this unlimited sharing makes them more vulnerable to cybervictimization (Walrave & Heirman, 2011; Mishna et al., 2012; Kowalski et al., 2014; Álvarez-García et al., 2015). Further, in these types of families adolescents might have less individual resources which can lead to the emotion regulation difficulties – ineffective emotion regulation strategies, uncontrollable impulses – and this can cause a higher degree of exposure to cybervictimization (Buelga et al., 2017; Van Dijk et al., 2014). In sum, our results showed both the risk and protective characteristics of relationships among family members.

Friend support is a protective factor against cyberbullying. Poor perceived peer support not only directly increased the chance of becoming a cyberbullying perpetrator but also had an indirect effect on cyberbullying through emotion regulation difficulties like difficulties in refraining from impulsive behaviour and in understanding of emotions. It was previously suggested that peers have an effect on the developing emotion regulation strategies during adolescence (Steinberg & Silk, 2002), as well as ineffective emotion regulation influences the involvement in cyberbullying perpetration (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Gianesini & Brighi, 2015). Further, earlier research (Baldry et al., 2015; Bayraktar et al., 2015; Calvete et al., 2010; Fanti et al., 2012; Heerde & Hemphill, 2018) supported that poor peer support increases the chance of becoming a perpetrator of cyberbullying. In our study, we managed to combine these factors into a model. Our results showed a pattern of perceived peer support, difficulties in refraining from impulsive behaviour and in understanding of emotions

underlying cyberbullying perpetration. An interpretation of this model might be that in the absence of supporting peer relationships as a means of emotion regulation, adolescents are not able to adaptively regulate their impulses and understand their emotions. Consequently, they turn to cyberbullying to deal with these negative emotional states through aggressive behaviours.

Additionally, perceived social support from friends and family are protective factors against cybervictimization. Whereas, peer support had only a direct effect on cybervictimization, social support from family had both a direct and indirect effects through difficulties in refraining from impulsive behaviour, in using effective emotion regulation strategies when experiencing negative emotions and in understanding of emotions. Previous studies (Baldry et al., 2015; Fanti et al., 2012; Fridh et al., 2015; Martins et al., 2016; Kowalski et al., 2014; Williams and Guerra, 2007) found that both poor parental support and lack of peer support increase the likelihood of cybervictimization. Our model also supported these results, furthermore, on account of perceived parental support we found a dynamic effect through ineffective emotion regulation. All in all, in absence of parental support that helps the development of emotion regulation during adolescence (Morris et al., 2007), ineffective emotion regulation makes youngsters vulnerable to cybervictimization (Gianesini & Brighi, 2015). Also, marginalized adolescents – who experience poor peer support – are more endangered to become cybervictimized.

At last, emotion regulation difficulties are risk factors in both cyberbullying perpetration and cybervictimization. This is in line with previous findings (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Gianesini & Brighi, 2015) showing that cyberbullying perpetrators, as well as cybervictims have difficulties with regulating their affective states. Furthermore, our findings demonstrated specific emotion regulation difficulties that have both direct and mediating effects on cyberbullying engagement. Cyberbullying perpetrators have difficulties in refraining from impulsive behaviours and in understanding emotions. As they are unable to process their emotions adaptively, they might use cyberbullying behaviours as means to canalize their unregulated emotions to an external subject. Whereas, difficulties in refraining from impulsive behaviour, in understanding of emotions and in accessing effective emotion regulation strategies when experiencing negative emotions increase the risk of cybervictimization. Adaptive emotion regulation strategies contribute to better social competence and functioning (Eisenberg & Fabes, 1992; Gross & John, 2003, Sroufe et al., 1984). Lacking adaptive social skills, youngsters might behave inadequately on the Internet (e.g. by limitlessly sharing pictures and/or videos), therefore their behaviour might result in

greater disclosure and increased risk of cybervictimization (Álvarez-García et al., 2015; Kowalski et al., 2014).

4.4.1. Limitations.

Some limitations of our study shall be noted: First of all, there was no pilot study conducted. Therefore, we do not have information on whether the questions and items were understandable for the participating adolescents. This is especially in question with the DERS as its Hungarian version was validated with adult population (Kököneyi, 2008). However, previous studies (Amendola et al., 2019; Neuman et al., 2010; Perez et al., 2012; Saritaş-Atalar, 2015) have also used it in adolescent research and it showed adequate psychometric properties with their adolescent samples. Moreover, the reliability of the questionnaire in our sample was acceptable, only two subscales showed slightly lower reliability values (.77) awareness and clarity. On account of opportunity sampling, our sample is not representative of the country's adolescent population. Although anonymity should have lowered the risk of socially desirable answers, adolescents might have underreported their involvement in cyberbullying. The low frequency of cyberbullying involvement in our sample can also be a consequence of our method to create the frequency information. The different approaches and strictness of classification may cause a variety of frequency information. Furthermore, research evidence implies that the severity of cyberbullying might be a better source of information than the frequency answer options of questionnaires (Várnai et al., 2018). However, another reason of underreported cyberbullying involvement might be that in some cases teachers were also present when the study was conducted. Further, it is important to be noted that the R squared and standardized beta estimates are weak both in the linear regression analyses and the path model analyses, though the models show significant results and excellent fitting indices. This implies that though there is a relationship among the variables, the independent variables do not predict the dependent variables precisely. This can be a consequence of high variability in the dataset, and that the data violates the normality assumptions. The reliability score of enmeshed family cohesion (FACES IV) was also quite low, this also could affect the R squared and standardized beta estimates. Thus the results regarding this scale should be interpreted carefully. Additionally, the low frequency of cyberbullying involvement in our sample can also be a possible cause of the weak R squared and standardized beta estimates. Moreover, on account of the cross-sectional design of our study we couldn't examine the long term effects of family and peer factors as well as emotion regulation. In order to have a better understanding of how family cohesion and adaptation changes during the course of adolescence and how these dynamics

affect cyberbullying involvement longitudinal research design is needed. Further, it would be important to examine the parents' knowledge about technology, their strategies to restrict or mediate the youngsters' Internet use, this could also contribute to a better understanding of our results.

4.4.2. Conclusions.

Overall, our results demonstrated the importance of family cohesion, perceived parental and peer support and emotion regulation in both cyberbullying perpetration and cybervictimization. However, because of the cross sectional nature of the study, it is important to note that the associations among the variables can happen the opposite way as well, e.g. poor perceived peer support can also be a consequence of cybervictimization. So, the analysed pathways are only based on our preconceptions but further longitudinal research will be needed to further analyse the causal relations among the observed variables. Further, the weak estimates imply that there may be other influencing factors that were not included in our research. These factors could be important in the understanding and tackling of cyberbullying. Therefore, it would be important to continue this line of research. Future research could use Bronfenbrenner's ecological systems theory (1989) and include more variables from the individual (e.g. moral and socio-emotional skills), microsystem (e.g. school climate), mesosystem (e.g. socioeconomic status), exosystem (e.g. community or media attitudes toward cyberbullying) and macrosystem (e.g. cultural attitude towards bullying behaviour) levels. The usage of the different levels and exploring their influences on cyberbullying engagement could result in a deeper understanding about the underlying dynamics of cyberbullying. Further, our results support the importance of involving family and peer relationships in the prevention/intervention programs. As well as, the results imply the significance of helping adolescents to understand their emotions and to regulate their impulses in order to prevent their cyberbullying involvement. Although, our results show that not only these factors are influencing cyberbullying engagement, so the continuation of research is also important from a practical viewpoint. Future findings about other significant influencing factors could help the development of effective prevention and intervention programs. At last, a strength of our research is that our results contribute to a more dynamic viewpoint of cyberbullying behaviours and might help the beginning of a new direction in cyberbullying research.

5. FOURTH STUDY – THE ROLE OF MORAL REASONING, MORAL DISENGAGEMENT, SOCIAL DESIRABILITY, EMOTION REGULATION, AND EMPATHY IN CYBER BYSTANDER BEHAVIOUR AND CYBERBULLYING ENGAGEMENT

5.1. Introduction

The aim of the fourth study was to explore the role of moral reasoning, moral disengagement, social desirability, emotion regulation, and empathy in cyber bystander behaviour and cyberbullying engagement. Our aim was to explore further how moral development, besides socio-emotional skills, affects cyberbullying engagement and cyber bystanders' reactions. As, it is yet understudied how moral development, especially prosocial moral reasoning, influences cyber bystander behaviour and cyberbullying engagement. Further, we aimed to explore the combined effect of moral reasoning and socio-emotional skills on cyber bystander behaviour and cyberbullying engagement.

5.1.1. The Role of Moral Reasoning, Moral Disengagement, Social Desirability, Emotion Regulation, and Empathy in Cyber Bystander Behaviour.

The three types of cyber bystander behaviour were described previously (see 1.3.4.), i.e. assisting or reinforcing the cyberbullying perpetrator, remaining passive, and/or intervening (Mazzone, 2020; Moxey & Bussey, 2020). Further, cyber bystander intervention can be categorized as prosocial (e.g. constructive intervention toward the victim or the bully) and as antisocial (e.g. aggressively reacting to the bully) in nature (Moxey & Bussey, 2020). Given the Internet's specific features (e.g. anonymity), these cyber bystander behaviours are fluid, i.e. one can remain passive when seeing a cyberbullying act, then in another cyberbullying situation act prosocially (DeSmet et al., 2014). Although, the type of cyber bystander behaviour is not only influenced by the Internet's characteristics, but by the bystander effect, behavioural, contextual, and personal factors as well (Allison & Bussey, 2016).

The bystander effect was first defined by Latané and Darley (1968/1970); they proposed that it takes 5 steps for bystanders to intervene: (1) noticing the situation; (2) recognizing the need for assistance; (3) feeling personal responsibility; (4) believing in the ability to help; (5) consciously deciding to help. Given the specific circumstances of cyberbullying incidents (e.g. lack of non-verbal cues, victim's reaction is hidden), these steps might be different for cyber bystanders. *Noticing* cyberbullying amidst online distractions (e.g. pop-up advertisements, streaming music) and during multitasking might be harder (Allison & Bussey, 2016; Fischer et al. 2011). Further, without others' reactions and because of situational ambiguity (i.e.

uncertainty over what qualifies as cyberbullying and the cybervictim's reaction is self-censored or not immediately visible), it is harder for cyber bystanders to *recognize* the victim's need for intervention (Anderson et al., 2014; Bastiaensens et al., 2014, 2015; Holfeld, 2014; Smith, 2012). Given the broad audience of cyberbullying incidents (Kwan & Skoric, 2013), adolescents might feel less responsible for intervening thus they stay passive more likely (Huang & Chou, 2010; Van Cleemput et al., 2014) and/or attribute the burden of *responsibility* to others (e.g. victim's friends or more popular others) (DeSmet et al., 2012, 2014; Machácková et al., 2013; Price et al., 2014). Additionally, adolescents' self-efficacy (DeSmet et al., 2012, 2016), the intervention's offline implications (DeSmet et al., 2012; Machácková et al., 2013), and cultural norms and values (Bastiaensens et al., 2014) also influence cyber bystanders' behaviour. If adolescents believe that they lack the *abilities*, self-efficacy or they feel that their online acts will have offline consequences (e.g. judgement for deviating from the passive norm or possible retaliation from the bully) they will less likely intervene during cyberbullying incidents. In addition, there are further behavioural, contextual and personal factors that affect cyber bystander behaviour.

One of the personal influencing factors of cyber bystander behaviour may be morality. Previous research investigating bystander behaviour during traditional bullying incidents showed that morality affects how bystanders choose to behave in bullying situations (Levasseur et al., 2017; Thornberg & Jungert, 2013). Indeed, adolescents who have higher moral sensitivity were more likely to support or defend victims and less likely to assist or reinforce the bully (Levasseur et al., 2017; Thornberg & Jungert, 2013). Although, there is little existing research investigating the effect of morality on cyber bystander behaviour. A qualitative research (Price et al., 2014) showed that adolescents are more likely to offer support and/or help for the victim if they feel morally responsible in the cyberbullying situation. Further, participants described an explicit societal law or norm, that 'Cyberbullying is bad'. Therefore, they believed that cyber bystanders have universal responsibility to help the cybervictim, i.e. acting on the conventional stage of moral reasoning (Kohlberg, 1984; Price et al., 2014). Further, higher levels of moral reasoning, like perspective-taking and using moral absolutes, were found to be connected to defending and constructively intervening cyber bystander behaviour. Although, perspective-taking reasoning was also used by passive bystanders to justify their lack of action (Graeff, 2014). However, the role of moral development (e.g. development of prosocial moral reasoning) on cyber bystander behaviour needs more exploration and clarification as we still know little based on the few existing studies.

Another influencing personal factor, which is related to morality and moral reasoning, is moral disengagement. Indeed, moral disengagement might be the cognitive mechanism that enables cyber bystanders to excuse or to justify their actions that can be assisting or reinforcing the bully, remaining passive or intervening aggressively. Previous research (DeSmet et al., 2012, 2014; Van Cleemput et al., 2014) have showed that adolescents use moral disengagement mechanisms, such as attribution of blame, diffusion of responsibility and dehumanisation, to justify their reaction in cyberbullying incidents. By attributing the blame to the victim, bystanders can justify why they do not help the cybervictim or why they assist/reinforce the cyberbullying perpetrator (DeSmet et al., 2012; Holfeld, 2014). Further, by attributing the responsibility to others - friends of the victim, popular peers – being a passive bystander is reframed as a legitimized reaction from cyber bystanders (DeSmet et al., 2012, 2014; Machácková et al., 2013; Price et al., 2014). Another strategy to justify the passive cyber bystander reaction in cyberbullying incidents, it to downplay or underestimate the severity and the consequences of cyberbullying (Bastiaensens et al., 2014; Huang & Chou, 2010). Moral disengagement is also a predictor of aggressive intervention in cyberbullying incidents. Adolescents with higher moral disengagement are more likely to fight the cyberbullying perpetrator using aggressive tactics, e.g. making threats or spreading rumours (Bussey et al., 2020; Moxey & Mussey, 2020). On the other hand, when moral disengagement is low, adolescents are more prone to help, support and/or defend the cybervictim (Bastiaensens et al., 2014; DeSmet et al., 2012, 2014; Patterson et al., 2016; Song & Oh, 2018). Adolescents with low moral disengagement have sensitive empathic skills and are prone to behave prosocially (Paciello et al., 2013), further they are characterized by higher levels of moral evaluation and reasoning (Patterson et al., 2016; Schultz et al., 2014; Van Cleemput et al., 2014), thus they do not shift the responsibility to help the victim to others but take responsibility in intervening (Song & Oh, 2018).

The development of social-emotional competence is highly associated with the development of morality during adolescence (Davis, 2018; Eisenberg et al., 1998; Eisenberg et al., 2018). Consequently, besides morality and moral disengagement socio-emotional skills can also affect cyber bystanders' reaction. Empathy - as a crucial socio-emotional skill - is important in social relationships (Chow et al., 2013; Gleason et al., 2009), in prosocial behaviour (Davis, 2018; Eisenberg et al., 2018; Gano-Overway, 2013), and in cyber bystander behaviour as well. Indeed, studies (Machácková et al., 2015; Price et al., 2014; Van Cleemput et al., 2014) have showed that adolescents were more likely to intervene as cyber bystanders if they were characterized

by higher levels of empathic reasoning. That is, adolescents feeling higher levels of empathic concern helped, supported or comforted the cybervictim, or advised the cyberbullying perpetrator to apologize (Machácková et al., 2015; Price et al., 2014; Van Cleemput et al., 2014). On the other hand, adolescents with lower levels of empathy were more likely to assist or reinforce the cyberbullying perpetrator or remain passive during the cyberbullying incidents (Van Cleemput et al., 2014). Additionally, Schultze-Krumbholz and colleagues (2020) have found both higher cognitive and higher affective empathy to increase the chance of prosocial cyber bystander behaviour and decrease negative bystander behaviour, i.e. assisting the cyberbullying perpetrator. Although, the results about the role of empathy in cyber bystander behaviour seem to be contradictory. For example, a study (Barlinska et al., 2015) showed that cognitive empathy can inhibit cyber bystanders' motivation to intervene. Further, Schultz and colleagues (2014) demonstrated that there was no difference between defenders and passive bystanders regarding empathic skills. In contrast, Machácková & Pfetsch (2016) found that affective empathy, but not cognitive empathy, predicted prosocial bystander behaviour. Whereas, Barlinska and colleagues (2018) found cognitive empathy, but not affective empathy, as a predictive personal factor of supporting bystander behaviour. In sum, the effect of empathy is not yet clarified and needs further research to get a deeper understanding.

Emotion regulation is another socio-emotional competence that is important for forming and maintaining social relationships, and for acting positively in situations that require prosocial intervention (Eisenberg, 2000; Eisenberg & Fabes, 1992; Gross & John, 2003). Although, emotion regulation was not yet examined as a personal factor influencing cyber bystander behaviour. We know so far that feeling upset after witnessing cyberbullying incidents enhances defending behaviour (Machacková et al., 2013; Price et al., 2014). Examining the role of emotion regulation in cyber bystander reactions might help us to understand the dynamics behind the aforementioned result. As we already know, emotion regulation is important in prosocial behaviour. Indeed, in order to help others in need, bystanders have to regulate the personal distress they are feeling by witnessing others' suffering or humiliation first. If the personal distress is not regulated adaptively, bystanders more likely ignore the incident, in order to avoid the overwhelming negative feelings and distress evoked by the situation (Eisenberg, 2000).

Social context and social norms can also influence bystander behaviour. Peer group morality and norms influence adolescents' moral behaviour, as well as their reaction in cyberbullying incidents: If passive bystanding is the normative in the peer group, adolescents will less likely

to defend cybervictims and more prone to stay passive and ignore cyberbullying incidents (Gini et al., 2015). Additionally, when adolescents perceive that online acts have offline implications, e.g. the bystanders know the cyberbullying perpetrator and by helping or defending the cybervictim they would be judged for deviating from the group norm, adolescents are less likely to intervene prosocially (Allison & Bussey, 2020). If the group norm emphasizes the support of in-group members and social conventions of friendships, adolescents are more likely to defend cybervictims (DeSmet et al., 2012, 2014; Price et al., 2014). In addition, other pressures might influence cyber bystander behaviour, like societal expectations and stereotypes. Such a stereotype is that females are more prosocial and more likely to help others in need. Indeed, studies have found that females are more likely to help cyber victims (Bastiaensens et al., 2014). Although, previous research showed that group norms affect cyber bystander behaviour, there is no existing research on how social desirability affects cyber bystander behaviour. As this conformity to the group's norms may be influenced by social desirability. Therefore, besides moral and socio-emotional skill's effect on cyber bystanders' reaction, the role of social desirability may help to further understand the psychological dynamics influencing bystanders' behaviour.

5.1.2. The Role of Moral Reasoning, Moral Disengagement, Emotion Regulation, and Empathy in Cyberbullying Engagement.

The role of moral disengagement in cyberbullying perpetration has been supported previously (Bussey et al., 2015; Renati, et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016). Indeed, perpetrators of cyberbullying acts use selective activation and/or disengagement of moral standards to justify their aggressive behaviour. Additionally this cognitive strategy is not only used by cyberbullying perpetrators, but by bully-victims as well, who are both victims and perpetrators in cyberbullying situations (Renati et al., 2012). Hence, cyberbullying perpetrators and bully-victims use cognitive strategies that justify their cyberbullying acts, reframe their behaviours as socially acceptable by using linguistic techniques, replace the responsibility for their behaviour, blame the victims of cyberbullying, or distort, ignore, or minimize the consequences of cyberbullying (Bussey et al., 2015; Renati, et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016). The use of these moral disengagement strategies might be an indicator of deficit regarding cyberbullying perpetrators' and bully-victims' moral development.

There has been little research investigating the association between morality and cyberbullying engagement (Perren & Gutzwiller-Helfenfinger, 2012). According to the results so far, cyberbullying perpetrators are often not morally aware that they are harming others online

(Teasley, 2014). Further, with low commitment to moral values and low feelings of remorse (like guilt or shame) adolescents are likely to perpetrate cyberbullying acts (Perren & Gutzwiller-Helfenfinger, 2012). Feelings of remorse are indicators that someone is aware of the consequences of his or her negative acts (Tangney et al., 2007). Without feelings of remorse, we might assume that cyberbullying perpetrators commit cyberbullying acts because they lack of moral values. Further, the fact that cyberbullying perpetrators have difficulties with the anticipation of the negative emotional states caused by their acts can be associated with their lack of empathic skills and difficulties with perspective taking (Perren & Gutzwiller-Helfenfinger, 2012).

Indeed, several studies investigated the association between cyberbullying engagement and empathy so far (Arató et al., 2020; Ang & Goh, 2010; Barlinska et al., 2013; Brewer & Kerlake, 2015; Del Rey, et al., 2016; Schulze-Krumbholz & Scheitauer, 2009; Steffgen et al., 2009, 2011). There seems to be a consensus regarding cyberbullying perpetrators' empathic skills. That is, cyberbullying perpetrators lack empathic skills, are unable to take others' perspective, or feel others' vicarious emotions (Arató et al., 2020; Brewer & Kerlake, 2015; Steffgen et al., 2009, 2011). In sum, they have difficulties with both affective and cognitive empathy (Ang & Gogh, 2010; Del Rey et al., 2016). However, the link between empathy and cybervictimization needs further research. As the results regarding cybervictimized adolescents' empathic skills are rather inconsistent. Some studies have found the same deficit concerning cybervictims' empathic skills as cyberbullying perpetrators' (Schultze-Krumbholtz & Scheitauer, 2009; Schultze-Krumbholtz & Scheitauer, 2013; Wong et al., 2014). That is, cybervictims having difficulties with feeling others' vicarious emotions and taking others' perspective, i.e. affective and cognitive empathy. Whereas other studies (Brewer & Kerlake, 2015; Renati et al., 2012; Zych et al., 2018) have found no such deficits in cybervictims' empathic skills. In fact, some studies have found that cybervictims are rather sensitive to others' emotional states (Arató et al., 2020; Almeida et al., 2012; Casas et al., 2013; Del Rey et al., 2016).

Adolescents' developing moral standards and moral disengagement is not only associated with empathy, but also with self-regulatory processes (Hardy et al., 2015). The internal moral standards regulate adolescents' behaviour by the evaluation of the potential consequences of certain acts (Perren & Gutzwiller-Helfenfinger, 2012). Emotion regulation is also a self-regulatory process that develops further during the course of adolescence and influences adolescents' behaviour (Archibald et al., 2003; Eisenberg, 2000; Giedd, 2004; Giedd et al., 1999; Robertson et al., 2012; Zeman et al., 2006). Indeed, emotion regulation processes

influence cyberbullying involvement (Arató et al., 2020; Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Ganesini & Brighi, 2015). Both cyberbullying perpetrators and cybervictims show problems with emotion regulation: If adolescents have emotion regulation difficulties or use maladaptive emotion regulation strategies, there is a heightened risk of cyberbullying involvement. (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Ganesini & Brighi, 2015; Vranjes et al., 2018). Additionally, our previous studies also showed evidence about the importance of emotion regulation in cyberbullying engagement. In the second study (Arató et al., 2020), we have found the specific maladaptive emotion regulation strategies characterizing cyberbullies and bully-victims (i.e. other blame). As well as, we found evidence about the specific adaptive and maladaptive emotion regulation strategies that are used by cybervictims (i.e. self blame, rumination, acceptance, and planning). Moreover, the third studies' results (see the 4.3. subsection) showed how difficulties in emotion regulation can play a mediating role between social factors (family cohesion, perceived support from peers and family) and cyberbullying engagement. Further, emotion regulation difficulties might be the reason behind why cybervictims perpetrate cyberbullying acts subsequent of their victimization (Cyclic Process Model, den Hamer & Konijn, 2016).

5.1.3. Aim of Study.

The aim of the current study was twofold. First, we aimed to explore the role of moral development, moral disengagement, social desirability, emotion regulation, and empathy in cyber bystander behaviour. Second, our goal was to examine the association among moral development, moral disengagement, emotion regulation, empathy, and cyberbullying involvement.

Concerning cyber bystander behaviour, our aim was to explore how moral development, moral disengagement, social desirability, emotion regulation, and empathy influence the different bystander reactions, i.e. antisocial, prosocial, and ignoring reactions. We hypothesized that those adolescents who use advanced levels of prosocial moral reasoning, like perspective taking reasoning, and have higher levels of social desirability, better empathic and emotion regulation skills are more likely to respond in prosocial ways in cyberbullying situations. Whereas, we assumed that those students who use moral disengagement strategies and lower levels of prosocial moral reasoning (e.g. hedonistic reasoning and dehumanization of the victim), have lower levels of social desirability, difficulties with emotion regulation, and lack empathic skills, are more likely to respond antisocially in cyberbullying situations. At last, we hypothesized that

those adolescents who ignore cyberbullying situations, and do not intervene in any form, use moral disengagement strategies and lower levels of prosocial moral reasoning, lack empathic skills, and have emotion regulation difficulties and lower levels of social desirability.

Additionally, we aimed to explore how moral development, moral disengagement, emotion regulation, and empathy influence cyberbullying engagement. We aimed to test how these factors differentiate among the different cyberbullying roles, i.e. cyberbullying perpetrator, cybervictim, bully-victim, and outsider. We hypothesized that moral disengagement, low levels of moral development, i.e. hedonistic reasoning, and lack of empathic and emotion regulation skills predict cyberbullying perpetration and bully-victim status. Whereas we hypothesized that cybervictims lack socio-emotional skill, i.e. have difficulties regarding empathic skills and emotion regulation processes. Further, we assumed that morality and moral disengagement do not influence cybervictimization.

5.2. Methods

5.2.1. Participants.

Five hundred and seven Caucasian high school students (182 males and 322 females), aged between 12 and 19 years (mean age = 15.55, SD = 1.46) participated in the study. The choice of school and students was incidental, based on accessibility. Regarding the school type, 8.3% of the students were attending primary school, 85.6 % of the students were attending high school, 5.7 % of the students were attending vocational school, and 0.4% were attending vocational high school. About the Internet usage of the sample, Table 23 provides detailed information. In our sample, 2.4 % of the students were involved in cyberbullying acts as perpetrators, 7.7 % of the participants were cybervictimized, 5.1 % were involved in cyberbullying acts both as perpetrators and victims, and 84.8 % of the students were not involved in cyberbullying acts. About the gender and age group prevalence of the cyberbullying groups, Table 24 shows detailed information.

Table 23. Internet usage of the sample in the fourth study

How much do you use the Internet...	...on a weekday		...on the weekend	
	N	%	N	%
I do not know.	34	6.7	33	6.5
I do not use the Internet.	9	1.8	13	2.6
Less, than an hour	27	5.3	12	2.4
1-2 hours	136	26.8	63	12.4
3-4 hours	143	28.2	123	24.3
5-6 hours	86	17.0	122	24.1
7-8 hours	35	6.9	66	13.0
More than 8 hours	37	7.3	75	14.8

Table 24. Descriptive data about the prevalence of the cyberbullying groups in gender and age groups in the fourth study

	Girls (n=322)	Boys (n=182)	12-13 years olds	14-16 years olds	17-19 years olds
	M (SD)	M (SD)	(n=47) M (SD)	(n=326) M (SD)	(n=134) M (SD)
Cyberbullying perpetration (ECIPQ)	13.77 (4.30)	14.53 (5.54)	12.83 (2.00)	14.11 (4.80)	14.60 (5.81)
Cybervictimization (ECIPQ)	16.46 (6.27)	16.05 (6.08)	15.72 (4.43)	16.30 (6.25)	16.69 (6.74)
	Prevalence – girls (%)	Prevalence – boys (%)	Prevalence – 12-14 years olds (%)	Prevalence - 15-16 years olds (%)	Prevalence - 17-19 years olds (%)
Cyberbullies	2.2	2.7	-	2.5	3.0
Cybervictims	9.0	5.5	6.4	8.3	6.7
Bully-victims	3.7	6.6	-	4.9	7.5
Outsiders	85.1	85.2	93.6	84.4	82.8

5.2.2. Materials.

The developmental level of prosocial moral reasoning and cyber bystander behaviour were assessed by an altered version of Carlo, Eisenberg, and Knight's (1992) Objective Measure of Prosocial Moral Reasoning (see Appendix 14). The original prosocial moral reasoning dilemmas were designed to invoke conflict between the actor's needs, will, and desires and others' needs. We used the same principle but redesigned the stories used to fit the aim of our study. Therefore, we created moral dilemma situations that are related to cyberbullying:

1. Abuse via picture uploading: *When logging into Facebook, you see that one of your closest friends changed his profile picture to his girlfriend's sexual/suggestive picture. You know that your friend does not like to be told how he should behave. Therefore, if you would tell him to delete the picture, he would quarrel with you and even your friendship would be at stake. This happened only a few second ago, so there are no reactions to the picture yet. What would you do?*

2. Exclusion from a group: *Your classmates formed a new group on Facebook where you can talk about school stuff. Although they only invite those who they think are cool and funny. If someone does not participate in the class fun, they exclude him or her from the group. In the school corridor, you overhear a conversation about not letting one of your classmates into this group because they think it is funny to decline his join requests. What would you do?*

3. Abusing messages: *You are part of a group chat, only the most popular and cool ones can get an invitation to this group chat. If you are excluded, you cannot get back. When you enter this group, you see that one member shared screen shots of a private conversation where the other person shared intimate things about him or herself that he/she would not like to be out for everyone to know. Although, if you would tell them not to share these private things you would be excluded from this group. What would you do?*

4. Hacking/abusing of profile: *You are in a confectionery with your friends when one of you goes to the bathroom and leaves his or her phone unlocked on the table. A friend of yours thinks that it would be a great idea to write to your other friend's crush messages, but you know that this friend would be furious about this. Although if you would stop the others they would find you a loser and a coward. What would you do?*

After reading the situations, the participants' first task was to decide what they would do in the described situations. They had three options: joining in on the abusive act (e.g. *"I find the choice*

of the new profile picture funny and I would share it with others as well.”), helping the one in need (e.g. “I would ask my friend to take the picture down.”), and ignoring the situation at hand (e.g. “I would not care about it.”). Following this decision they were asked to rate the importance of six reasons why they would decide to help or not help in the situations on a five-point scale (1 = not at all important; 5 = very important). Each given reason represented a certain developmental level of prosocial moral reasoning, that were hedonistic reasoning (e.g. “It depends how funny the situations is”, Cronbach’s $\alpha = .77$), needs-oriented reasoning (e.g. “It depends whether the other one needs help or not.”, Cronbach’s $\alpha = .71$), approval-oriented reasoning (e.g. “It depends whether your friends/family would approve of your decision.”, Cronbach’s $\alpha = .81$), stereotypic reasoning (e.g. “It depends what you think would be decent behaviour.”, Cronbach’s $\alpha = .75$), and perspective taking reasoning (e.g. “It depends how would you feel about yourself if you would help or not.”, Cronbach’s $\alpha = .82$). The sixth reasoning choice was a nonsense item (e.g. “It depends whether you believe in humanity’s power.”). For the mean scores, standard deviations and Cronbach’s alphas see Table 25.

The European Cyberbullying Intervention Project Questionnaire (ECIPQ, Del Rey et al., 2015, see Appendix 5) measures both cyberbullying perpetration (Cronbach’s $\alpha = .90$) and cybervictimization (Cronbach’s $\alpha = .88$) with 22 items. Participants answered on a 5-point Likert scale (0 = never, 1 = once or twice, 2 = once a month, 3 = once a week, 4 = more times a week) to indicate how often they engage in cyberbullying behaviours or become victims of it (For the mean scores, standard deviations and Cronbach’s alphas see Table 25).

The Cyber Bullying Moral Disengagement Scale (CBMDS, Bussey et al., 2015, see Appendix 11) is a one factor scale consisting of 8 items (Cronbach’s $\alpha = .77$). Each item refers to cyberbullying and one item represents each of the moral disengagement mechanisms: moral justification, euphemistic language, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame and dehumanizing. Participants implied on a four-point Likert-scale (1 - don’t agree, 4 - totally agree) to what extent they agreed with the statements (For the mean scores, standard deviations and Cronbach’s alphas see Table 25).

The Interpersonal Reactivity Index (IRI, Davis, 1983 trans. Kulcsár, 1998, see Appendix 2) measures empathy with 28 items. We have chosen the IRI for our research because it measures perspective taking that is developmentally relevant for prosocial moral reasoning, and also is an important emotional skill underlying helping behaviour. The scale has four subscales: Fantasy (Cronbach’s $\alpha = .73$), Empathic Concern (Cronbach’s $\alpha = .63$), Perspective Taking

(Cronbach's $\alpha = .64$), and Personal Distress (Cronbach's $\alpha = .68$). Participants answered on a five-point scale (0 = does not describe me well; 4 = describes me very well) to indicate how much the items describe their thoughts and feelings in a variety of situations (For the mean scores, standard deviations and Cronbach's alphas see Table 25).

The Difficulties in Emotion Regulation Scale Short Form (DERS-SF, Kaufman et al., 2015, see Appendix 15) evaluates difficulties in emotion regulation consisting of 18 items. The DERS-SF measures difficulties in the following aspects of emotion regulation: (a) acceptance of emotions (non-acceptance, Cronbach's $\alpha = .63$); (b) ability to engage in goal-directed behaviour when experiencing negative emotions (goals, Cronbach's $\alpha = .83$); (c) refraining from impulsive behaviour (impulse, Cronbach's $\alpha = .87$); (d) awareness of emotions (awareness, Cronbach's $\alpha = .79$); (e) accessing effective emotion regulation strategies when experiencing negative emotions (strategies, Cronbach's $\alpha = .66$); (f) understanding of emotions (clarity, Cronbach's $\alpha = .75$). Participants answered on a 5-point Likert scale (1 = almost never, 0-10%; 2 = sometimes, 11-35%; 3 = about half the time, 36-65%; 4 = most of the time, 66-90%; 5 = almost always, 91-100%) to indicate how often the different emotion regulation difficulties characterize them (For the mean scores, standard deviations and Cronbach's alphas see Table 25).

The Social Desirability Scale - 17 (SDS - 17, Stöber, 2001, see Appendix 16) is a short and up-to-date version of the Marlowe-Crowne Scale, that measures social desirability with 17 items (Cronbach's $\alpha = .69$). Participants had to indicate on a dichotomous scale whether the items are describing them or not (0 = false, 1 = true) (For the mean scores, standard deviations and Cronbach's alphas see Table 25).

5.2.3. Procedure.

After the ethical approval was granted from the Hungarian United Ethical Review Committee for Research in Psychology (reference number: 2020-93), the accessible schools' school principals were asked whether they agree to participate in the study. After the approval from the school principals, parents' consent were asked. The students also were asked to approve of participating in the study, and then they completed the questionnaires by paper-pencil or via the Internet during school hours supervised by teachers or research assistants.

5.2.4. Statistical Analyses.

Scoring and coding of the prosocial reasoning stories. First, for each participant, the decisions that corresponded to one of the three types of cyber bystander reactions (antisocial, prosocial, and ignoring) were summed across the four situations to obtain a frequency score. Based on these frequency scores we created groups for each cyber bystander reaction. The criterion of antisocial and ignoring bystander reaction was at least one answer on both types of reactions, since this reaction is against basic social norms, consequently even one answer is a manifestation of the neglect of moral conduct. Those participants, who responded at least one time antisocially, belonged to the antisocial bystander reaction group (N = 81), the rest of the participants, who never responded antisocially across the situations, belonged to the not antisocial group (N = 426). The participants, who responded at least one time neutrally, belonged to the ignoring bystander reaction group (N = 266), the participants who never reacted neutrally across the situations, belonged to the not ignoring group (N = 240). The criterion of prosocial bystander reaction was slightly different, because this reaction was the socially accepted decision to the moral dilemma presented in the situations, consequently most of the participants chose the prosocial option across all situations and in three out of the four situations (N = 352). Additionally, one fifth of the participants chose the prosocial option in half the situations (N = 103). Therefore, to get a clearer picture on the prosocial answers, we added the criteria that only those prosocial answers counted as prosocial where the reasoning associated with the decision was not hedonistic. If the reasoning coupled with the prosocial answer was hedonistic then we did not count that answer as prosocial. After recoding the prosocial answers according to the criterion, the participants who responded at least one time prosocially, belonged to the prosocial bystander reaction group (N = 391), the participants who never responded prosocially across the situations belonged to the not prosocial group (N = 115). Second, for each participant, the ratings that corresponded to one of the five types of prosocial moral reasoning (hedonistic, need oriented, approval oriented, stereotypic, and perspective taking) were summed across the stories to obtain a frequency score. A frequency score was also obtained for the nonsense items.

Statistical analyses of the predictors of cyber bystander behaviour. Binary logistic regressions were performed to ascertain the effects of age, social desirability, empathy (personal distress, empathic concern, fantasy, and perspective taking), emotion regulation difficulties (difficulties with acceptance of emotions, with ability to engage in goal-directed behaviour when experiencing negative emotions, with refraining from impulsive behaviour, with awareness of

emotions, with accessing effective emotion regulation strategies when experiencing negative emotions, and with understanding of emotions), moral disengagement and levels of prosocial moral reasoning (hedonistic reasoning, needs-oriented reasoning, approval-oriented reasoning, stereotypic reasoning, and perspective taking reasoning) on the likelihood of antisocial, prosocial, and ignoring cyber bystander behaviour.

Statistical analyses of the predictors of cyberbullying engagement. Pearson correlations were conducted to explore the associations among cyberbullying perpetration, cybervictimization, empathy (personal distress, empathic concern, fantasy, and perspective taking), emotion regulation difficulties (difficulties with acceptance of emotions, with ability to engage in goal-directed behaviour when experiencing negative emotions, with refraining from impulsive behaviour, with awareness of emotions, with accessing effective emotion regulation strategies when experiencing negative emotions, and with understanding of emotions), moral disengagement, and the levels of prosocial moral reasoning (hedonistic reasoning, needs-oriented reasoning, approval-oriented reasoning, stereotypic reasoning, and perspective taking reasoning). Based on the results of Pearson correlations, empathy was not included in the further analysis of cyberbullying engagement's determinants. Multinomial logistic regression analysis was used to determine which of the independent variables (age, emotion regulation difficulties, moral disengagement, and levels of prosocial moral reasoning) affected the different cyberbullying roles (cyberbullying perpetrator, cyber victim, bully-victim, and outsiders). As this analysis predicted cyberbullying perpetration and cybervictimization poorly, additional linear regression analyses were conducted to examine which of the independent variables (age, emotion regulation difficulties, moral disengagement, and levels of prosocial moral reasoning) affected cyberbullying perpetration and cybervictimization.

Table 25. Descriptive statistics and Spearman correlation for the variables in the fourth study

*p<.05, **p<.01

	Cyberbullying perpetration	Cybervictimization	Mean score (SD)	Cronbach's α
Cyberbullying perpetration	1	.60**	14.12(4.93)	.90
Cybervictimization	.60**	1	16.35(6.24)	.88
Social Desirability	-.25**	-.10*	9.43(3.25)	.69
DERS-strategies	.10*	.24**	8.17(2.82)	.66
DERS-non-acceptance	.10*	.23**	7.58(2.85)	.63
DERS-impulse	.16**	.16**	7.21(3.24)	.87
DERS-goals	.003	.08	9.89(3.10)	.83
DERS-awareness	.10*	.04	8.53(1.38)	.79
DERS-clarity	.15**	.23**	7.66(2.91)	.75
Moral disengagement	.57**	.36**	12.55(3.90)	.77
IRI-fantasy	-.05	.02	17.24(4.99)	.73
IRI-perspective taking	-.14**	-.03	16.48(3.94)	.64
IRI-empathic concern	-.15**	-.02	16.79(3.84)	.63
IRI-personal distress	.10*	.16**	13.51(4.24)	.68
Hedonistic reasoning	.21**	.06	7.26(3.59)	.77
Needs oriented reasoning	-.12**	-.12**	15.28(3.31)	.71
Approval oriented reasoning	-.03	-.04	14.30(4.27)	.83
Stereotypic reasoning	-.19**	-.21**	15.65(3.20)	.75
Perspective taking reasoning	-.11*	-.11*	15.14(3.54)	.82

5.3. Results

5.3.1. The Role of Moral Development, Moral Disengagement, Social Desirability, Emotion Regulation, and Empathy in Cyber Bystander Behaviour.

5.3.1.1. Determinants of Antisocial Cyber Bystander Behaviour.

The model was statistically significant ($\chi^2 [18] = 98.66, p < .001$), it explained 30.3 % of the overall variance in the dependent variable (Nagelkerke $R^2 = .30$) and correctly classified 85.4 % of cases. Age ($p < .001, OR = 1.41, 95 \% CI = 1.15; 1.73$), moral disengagement ($p = .05, OR = 1.07, 95 \% CI = 1.00; 1.14$), hedonistic prosocial moral reasoning ($p < .001, OR = 1.25, 95 \% CI = 1.16; 1.35$), and perspective taking prosocial moral reasoning ($p = .01, OR = 1.17, 95 \% CI = 1.03; 1.33$) increased the likelihood of antisocial cyber bystander behaviour. Whereas, needs oriented prosocial moral reasoning ($p = .02, OR = 0.87, 95 \% CI = 0.78; 0.98$) decreased the likelihood of antisocial cyber bystander behaviour. Further, social desirability ($p = .07, OR = 0.92, 95 \% CI = 0.83; 1.01$) marginally significantly decreased the likelihood of antisocial bystander reaction (for the effect of all variables see Table 26).

Table 26. Determinants of antisocial cyber bystander behaviour

* $p < .05$, ** $p < .01$

	OR	95% CI	
		Lower	Upper
Age	1.41**	1.15	1.73
Social desirability	0.92	0.83	1.01
DERS-strategies	1.05	0.91	1.22
DERS-non-acceptance	1.03	0.91	1.16
DERS-impulse	0.93	0.84	1.03
DERS-goals	1.03	0.92	1.15
DERS-awareness	1.03	0.84	1.26
DERS-clarity	1.01	0.90	1.13
Moral disengagement	1.07*	1.00	1.14
IRI-fantasy	1.02	0.96	1.09
IRI-perspective taking	0.97	0.89	1.06
IRI-empathic concern	0.97	0.88	1.07
IRI-personal distress	0.96	0.89	1.05
Hedonistic reasoning	1.25**	1.16	1.35
Needs oriented reasoning	0.87*	0.78	0.98
Approval oriented reasoning	1.01	0.93	1.09
Stereotypic reasoning	0.90	0.80	1.03
Perspective taking reasoning	1.17*	1.03	1.33

5.3.1.2. Determinants of Prosocial Cyber Bystander Behaviour.

The model was statistically significant ($\chi^2 [18] = 272.05, p < .001$), it explained 63.2 % of the overall variance in the dependent variable (Nagelkerke $R^2 = .63$) and correctly classified 87.4 % of cases. Stereotypic prosocial moral reasoning ($p = .01, OR = 1.20, 95\% CI = 1.05; 1.38$) increased the likelihood of prosocial cyber bystander behaviour. Whereas hedonistic prosocial moral reasoning ($p < .001, OR = 0.55, 95\% CI = 0.49; 0.62$) and fantasy ($p = .04, OR = 0.93, 95\% CI = 0.86; 0.99$) decreased the likelihood of prosocial cyber bystander behaviour. Additionally, difficulties with refraining from impulsive behaviour marginally significantly ($p = .06, OR = 1.12, 95\% CI = 0.99; 1.26$) increased, while moral disengagement marginally significantly ($p = .09, OR = 0.93, 95\% CI = 0.86; 1.01$) decreased the likelihood of prosocial cyber bystander behaviour (for the effect of all the variables see Table 27).

Table 27. Determinants of prosocial cyber bystander behaviour

* $p < .05$, ** $p < .01$

	OR	95% CI	
		Lower	Upper
Age	1.10	0.88	1.38
Social desirability	1.00	0.89	1.12
DERS-strategies	0.94	0.80	1.10
DERS-non-acceptance	0.98	0.85	1.12
DERS-impulse	1.12	0.99	1.26
DERS-goals	1.09	0.96	1.24
DERS-awareness	0.89	0.69	1.13
DERS-clarity	1.01	0.88	1.14
Moral disengagement	0.93	0.86	1.01
IRI-fantasy	0.93*	0.86	0.99
IRI-perspective taking	1.02	0.92	1.14
IRI-empathic concern	1.09	0.97	1.21
IRI-personal distress	1.05	0.95	1.15
Hedonistic reasoning	0.55**	0.49	0.62
Needs oriented reasoning	1.03	0.90	1.17
Approval oriented reasoning	1.04	0.95	1.14
Stereotypic reasoning	1.20*	1.05	1.38
Perspective taking reasoning	0.99	0.87	1.14

5.3.1.3 Determinants of Ignoring/Neutral Cyber Bystander Behaviour.

The model was statistically significant ($\chi^2 [18] = 116.75, p < .001$), it explained 27.5 % of the overall variance in the dependent variable (Nagelkerke $R^2 = .28$) and correctly classified 70.7 % of cases. Moral disengagement ($p < .001, OR = 1.12, 95 \% CI = 1.05; 1.19$) and hedonistic prosocial moral reasoning ($p = .02, OR = 1.07, 95 \% CI = 1.01; 1.14$) increased the likelihood, whereas needs oriented prosocial moral reasoning ($p < .001, OR = 0.86, 95 \% CI = 0.79; 0.93$) decreased the likelihood of ignoring/neutral cyber bystander behaviour. Further, difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions marginally significantly ($p = .08, OR = 1.08, 95 \% CI = 0.99; 1.17$) increased the likelihood of ignoring/neutral cyber bystander behaviour, whereas personal distress ($p = .09, OR = 0.95, 95 \% CI = 0.89; 1.01$) marginally significantly decreased the likelihood of ignoring/neutral cyber bystander behaviour (for the effect of all the variables see Table 28).

Table 28. Determinants of ignoring/neutral cyber bystander behaviour

* $p < .05$, ** $p < .01$

	OR	95% CI	
		Lower	Upper
Age	0.97	0.84	1.12
Social desirability	0.95	0.88	1.02
DERS-strategies	1.03	0.93	1.15
DERS-non-acceptance	1.03	0.94	1.13
DERS-impulse	0.99	0.92	1.06
DERS-goals	1.08	0.99	1.17
DERS-awareness	1.02	0.88	1.19
DERS-clarity	1.02	0.94	1.11
Moral disengagement	1.12**	1.05	1.19
IRI-fantasy	1.03	0.98	1.07
IRI-perspective taking	0.98	0.92	1.05
IRI-empathic concern	0.99	0.92	1.06
IRI-personal distress	0.95	0.89	1.01
Hedonistic reasoning	1.07*	1.01	1.14
Needs oriented reasoning	0.86**	0.79	0.93
Approval oriented reasoning	0.96	0.91	1.02
Stereotypic reasoning	0.96	0.89	1.05
Perspective taking reasoning	0.95	0.89	1.03

5.3.2. Determinants of Cyberbullying Engagement.

According to the results of Pearson correlations, both cyberbullying perpetration and cybervictimization were statistically significantly associated with emotion regulation

difficulties, but the Pearson correlation coefficients were small (for detailed results see Table 25). However, the association was somewhat stronger between cybervictimization and difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($r = .24, p < .001$), difficulties with acceptance of emotions ($r = .23, p < .001$), and difficulties with understanding of emotions ($r = .23, p < .01$). Further, both cyberbullying perpetration ($r = .57, p < .001$) and cybervictimization ($r = .36, p < .001$) had a statistically significant positive association with moral disengagement. Both cyberbullying perpetration and cybervictimization had statistically significant relationship with empathy, but the Pearson correlation coefficients were very low (see Table 23). At last, both cyberbullying perpetration and cybervictimization were statistically significantly associated with the developmental levels of prosocial moral reasoning; although the Pearson correlation coefficients were also very small (see Table 25). Although the relationship was somewhat stronger between cyberbullying perpetration and hedonistic reasoning ($r = .21, p < .001$) and between cybervictimization and stereotypic reasoning ($r = -.21, p < .01$).

5.3.2.1. Determinants of Cyberbullying Roles.

According to the results of the multinomial logistic regression analysis, the model fit the data well ($\chi^2 [df] = 155.04 (39), p < .001$). Age ($p = .03$), difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions ($p = .02$), and moral disengagement ($p < .001$) had significant effect on the cyberbullying roles. Difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($p = .06$) and stereotypic prosocial moral reasoning ($p = .07$) had a marginally significant effect on the cyberbullying roles (for all the variable effects see Table 29). Moral disengagement ($p < .001, OR = 1.35, 95 \% CI = 1.16; 1.57$) increases the risk of cyberbullying perpetration. Additionally age ($p = .08, OR = 1.50, 95 \% CI = 0.95; 2.37$) had marginally significant tendency to increase the risk of engagement in cyberbullying perpetration and difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions ($p = .06, OR = 0.76, 95 \% CI = 0.57; 1.01$) had a marginally significant tendency to decrease the risk of engagement in cyberbullying (for the effect of all the variables see Table 30). Further, moral disengagement ($p < .01, OR = 1.17, 95 \% CI = 1.06; 1.30$) also increased the risk of cybervictimization. Difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($p = .05, OR = 1.19, 95 \% CI = 1.00; 1.41$) had a marginally significant tendency to increase the risk of cybervictimization, whereas hedonistic prosocial moral reasoning ($p = .06, OR = 0.89, 95 \% CI = 0.78; 1.01$) had a marginally significant tendency to decrease the risk of

cybervictimization (for the effect of all the variables see Table 31). Age ($p = .01$, OR = 1.72, 95 % CI = 1.15; 2.58), difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($p = .05$, OR = 1.31, 95 % CI = 1.00; 1.72) and moral disengagement ($p < .001$, OR = 1.50, 95 % CI = 1.30; 1.71) increased the risk of involvement in cyberbullying as both perpetrators and victims. Whereas, difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions ($p = .01$, OR = 0.72; 95 % CI = 0.56, 0.92) and stereotypic prosocial moral reasoning ($p = .02$, OR = 0.75, 95 % CI = 0.60; 0.95) decreased the risk of involvement in cyberbullying as both perpetrators and victims. In 98.4 % of the time, the model correctly predicted outsiders and in 57.7 % of the time correctly predicted bully-victims. Although, the model predicted cybervictimization (2.6 % of the time) and cyberbullying perpetration (0.0 % of the time) poorly (for the effect of all the variables see Table 32).

Table 29. Determinants of cyberbullying roles: Results of likelihood ratio tests

	Significance
Age	.03
DERS-strategies	.06
DERS-non-acceptance	.75
DERS-impulse	.89
DERS-goals	.02
DERS-awareness	.41
DERS-clarity	.20
Moral disengagement	< .001
Hedonistic reasoning	.19
Needs oriented reasoning	.35
Approval oriented reasoning	.52
Stereotypic reasoning	.07
Perspective taking reasoning	.85

Table 30. Determinants of cyberbullying perpetration compared to outsiders
 *p<.05, **p<.01

	OR	95% CI	
		Lower	Upper
Age	1.50	0.95	2.37
DERS-strategies	1.22	0.87	1.70
DERS-non-acceptance	1.03	0.77	1.38
DERS-impulse	1.10	0.87	1.40
DERS-goals	0.76	0.57	1.01
DERS-awareness	1.29	0.81	2.05
DERS-clarity	1.10	0.85	1.44
Moral disengagement	1.35**	1.16	1.57
Hedonistic reasoning	0.98	0.81	1.19
Needs oriented reasoning	0.90	0.68	1.20
Approval oriented reasoning	1.13	0.90	1.42
Stereotypic reasoning	0.87	0.65	1.16
Perspective taking reasoning	0.95	0.70	1.29

Table 31. Determinants of cybervictimization compared to outsiders
 *p<.05, **p<.01

	OR	95% CI	
		Lower	Upper
Age	1.08	0.85	1.37
DERS-strategies	1.19	0.99	1.41
DERS-non-acceptance	1.07	0.93	1.23
DERS-impulse	0.99	0.88	1.13
DERS-goals	0.92	0.80	1.07
DERS-awareness	1.03	0.80	1.33
DERS-clarity	1.12	0.97	1.28
Moral disengagement	1.17**	1.05	1.30
Hedonistic reasoning	0.89	0.78	1.01
Needs oriented reasoning	0.92	0.80	1.05
Approval oriented reasoning	1.02	0.93	1.13
Stereotypic reasoning	0.91	0.79	1.05
Perspective taking reasoning	1.01	0.88	1.16

Table 32. Determinants of the bully-victim role compared to the outsider role
 *p<.05, **p<.01

	OR	95% CI	
		Lower	Upper
Age	1.72**	1.15	2.58
DERS-strategies	1.31*	1.00	1.72
DERS-non-acceptance	1.10	0.86	1.40
DERS-impulse	1.01	0.82	1.23
DERS-goals	0.72**	0.56	0.92
DERS-awareness	1.33	0.91	1.95
DERS-clarity	1.20	0.96	1.50
Moral disengagement	1.49**	1.30	1.71
Hedonistic reasoning	1.05	0.90	1.22
Needs oriented reasoning	1.11	0.88	1.41
Approval oriented reasoning	1.09	0.92	1.30
Stereotypic reasoning	0.75*	0.60	0.95
Perspective taking reasoning	0.89	0.69	1.16

5.3.2.2. Determinants of Cyberbullying Perpetration.

The model (age, emotion regulation difficulties, moral disengagement, developmental level of prosocial moral reasoning) significantly affected cyberbullying perpetration ($R^2 = .38$, $F [13, 493] = 22.96$, $p < .001$). Age ($\beta = .14$, $t = 3.70$, $p < .001$), difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions ($\beta = -.15$, $t = -3.35$, $p = .001$), moral disengagement ($\beta = .53$, $t = 13.69$, $p < .001$) and stereotypic prosocial moral reasoning ($\beta = -.10$, $t = -2.03$, $p = .04$) statistically significantly affected cyberbullying perpetration. Whereas, difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($\beta = .09$, $t = 1.80$, $p = .07$) and understanding of emotions ($\beta = .08$, $t = 1.82$, $p = .07$) marginally significantly affected cyberbullying perpetration (for the effect of all the variables see Table 33).

Table 33. Determinants of cyberbullying perpetration in the fourth study
*p<.05, **p<.01

	β	t
Age	.14**	3.70
DERS-strategies	.09	1.80
DERS-non-acceptance	.03	0.76
DERS-impulse	.04	1.03
DERS-goals	-.15**	-3.35
DERS-awareness	.04	1.11
DERS-clarity	.08	1.82
Moral disengagement	.53**	13.69
Hedonistic reasoning	.04	1.05
Needs oriented reasoning	.05	0.97
Approval oriented reasoning	.04	0.98
Stereotypic reasoning	-.10*	-2.03
Perspective taking reasoning	.00	-0.01

5.3.2.3. Determinants of Cybervictimization.

The model (age, emotion regulation difficulties, morel disengagement, developmental level of prosocial moral reasoning) significantly affected cybervictimization ($R^2 = .24$, $F [13, 493] = 12.18$, $p < .001$). Age ($\beta = .109$, $t = 2.18$, $p = .03$), difficulties with accessing effective emotion regulation strategies when experiencing negative emotions ($\beta = .19$, $t = 3.47$, $p = .001$), with the acceptance of emotions ($\beta = .12$, $t = 2.35$, $p = .02$), with the ability to engage in goal-directed behaviour when experiencing negative emotions ($\beta = -.13$, $t = -2.62$, $p = .01$), and with understanding of emotions ($\beta = .10$, $t = 2.10$, $p = .04$), moral disengagement ($\beta = .34$, $t = 7.85$, $p < .001$), and stereotypic prosocial moral reasoning ($\beta = -.16$, $t = -3.03$, $p < .01$) statistically significantly affected cybervictimization (for the effect of all the variables see Table 34).

Table 34. Determinants of cybervictimization in the fourth study
*p<.05, **p<.01

	β	t
Age	.09*	2.18
DERS-strategies	.19**	3.47
DERS-non-acceptance	.12*	2.35
DERS-impulse	.01	0.16
DERS-goals	-.13**	-2.62
DERS-awareness	-.01	-0.18
DERS-clarity	.10*	2.10
Moral disengagement	.34**	7.85
Hedonistic reasoning	-.07	-1.57
Needs oriented reasoning	.02	0.36
Approval oriented reasoning	.04	0.96
Stereotypic reasoning	-.16**	-3.03
Perspective taking reasoning	-.02	-0.40

5.4. Discussion

The goal of the current study was twofold. First, we aimed to explore the role of moral development, moral disengagement, social desirability, empathy, and emotion regulation in cyber bystander behaviour. Second, our goal was to examine whether moral development, moral disengagement, empathy, and emotion regulation differentiate among the cyberbullying roles. Our results showed a pattern of prosocial moral developmental stages, moral disengagement, and empathic skills underlying cyber bystanders' reaction. Further, the results demonstrated how prosocial moral reasoning, moral disengagement, and emotion regulation difficulties affect cyberbullying involvement.

5.4.1. Determinants of Cyber Bystander Behaviour.

We hypothesized that those students, who use moral disengagement strategies and lower levels of prosocial moral reasoning, besides they lack social desirability, empathic and emotion regulation skills, are more likely to react antisocially in cyberbullying situations. Our results demonstrated, in line with our assumptions, that older adolescents, who use hedonistic moral reasoning and moral disengagement strategies to justify their actions are more likely to respond antisocially in cyberbullying situations. Adolescents using hedonistic moral reasoning are more self-centred, less able to take others' perspective (Palmer, 2005). Thus, they do not consider others' needs in cyberbullying situations; they behave in a way that benefits them. They may join the cyberbullying perpetrator for several self-oriented reasons: They know the cyberbullying perpetrator in their offline environment and fear of retaliation or of their own victimization (Allison & Bussey, 2016). Further, if others also join the bully, they will also reinforce the perpetrator, acting according to the peer group's norms (Gini et al., 2015). They also may redirect their own, unregulated frustration and negative emotional states towards the cybervictim by joining the perpetrator. However, our results failed to show evidence on the effect of emotion regulation difficulties on antisocial cyber bystander behaviour. Antisocially reacting cyber bystanders tend to use moral disengagement strategies to make their antisocial behaviours look less harmful by blaming the victim, distorting the consequences of cyberbullying, or relocating the responsibility (Wang et al., 2016). A quite surprising result is that perspective taking prosocial moral reasoning, the most advanced level of prosocial moral reasoning, also increased the likelihood of an antisocial reaction. Although, a previous study (Graeff, 2014) has showed that perspective-taking reasoning can also be used to justify passivity in cyberbullying situation. Paired with moral disengagement, perspective-taking reasoning

might be used to justify antisocial behaviour 1 by blaming the victim or minimizing the emotional harm caused in the victim by the antisocial acts. For example, youngsters can use perspective taking to reason that the cyberbully had a good reason to perpetrate their acts or that the cybervictim give reason to provoke the cyberbully. This way the ability to take others perspective to make moral decisions can be used as a justifying strategy, i.e. moral disengagement strategy. Further, needs oriented prosocial moral reasoning decreased the likelihood of antisocial reaction. Indeed, needs oriented reasoning is associated with empathic attitude towards others in need (Carlo et al., 1992). Consequently, it may enhance prosocial response to cybervictims' humiliation and decrease the likelihood of joining the cyberbullying perpetrator as our results have showed. Additionally, social desirability only had a marginal effect on antisocial cyber bystander behaviour. According to this result, if youngsters tend to make the socially accepted, i.e. social desirable decisions, they are less likely to react in antisocial ways as cyber bystanders. However, to better understand the pressure from peers, the measurement of cyberbullying-related peer norms would be more informative. According to our results, besides emotion regulation, empathy also had no effect on antisocial bystander reaction.

We assumed that adolescents, who use advanced levels of prosocial moral reasoning, tend to make socially desirable decisions, and have better empathic and emotion regulation skills are more likely to respond in prosocial ways in cyberbullying situations. In line with our assumptions, hedonistic moral reasoning and moral disengagement decreased the likelihood of helping behaviour toward the cybervictim. Indeed, previous studies (Patterson et al., 2016; Schultz et al., 2014; Van Cleemput et al., 2014) have supported this result as well, showing that bystanders with low moral disengagement tend to defend and comfort the victim. Self-focused prosocial moral reasoning, i.e. hedonistic and approval oriented moral reasoning, enhance prosocial behaviour that is beneficial for the self, while more advanced levels of prosocial moral reasoning reinforce altruistic helping behaviour (De Caroli & Sagone, 2014). This partly supports our result, demonstrating that hedonistic moral reasoning decreases supporting behaviour toward victims of cyberbullying. Although, stereotypic, approval oriented moral reasoning increased the likelihood of prosocial response from bystanders. According to our and De Caroli and Sagone's (2014) results, adolescents act in a prosocial way because the peer group's morality and norms influence their behaviour (Gini et al., 2015). Surprisingly, difficulties with refraining from impulsive behaviour increased and a component of cognitive empathy, i.e. fantasy, decreased the likelihood of prosocial bystander reaction. The fantasy

subscale of the IRI measures whether a person can identify with characters from books, movies, and plays and how they can be involved in fictional stories. Maybe this result shows that the situations used were not calling for a helpful answer if someone were more deeply identifying with the characters. This result may be caused by the lack of a pilot study that would have helped us to create more realistic situations, i.e. making the identification with the characters and the situation much easier for the respondents. On the other hand, impulsivity might drive adolescents to act in prosocial ways in situations like cyberbullying. We did not find evidence supporting the role of social desirability in prosocial cyber bystander behaviour. Since the participants tended to make the prosocial decisions throughout the situations by saying that they would prosocially intervene, this result is also quite unexpected. However, we used a more general measure to assess social desirability, maybe if we have used a more specific measurement, assessing cyberbullying-related norms (anti-bully, pro-bully, and moral indifference), that would have provided more accurate information.

At last, we hypothesized that students, who use lower levels of prosocial moral reasoning and high levels of moral disengagement strategies, as well as lack social desirability, empathic and emotion regulation skills are likely to ignore cyberbullying situations. In line with our predictions, our results showed that hedonistic moral reasoning, moral disengagement and difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions increased the likelihood of lack of intervention from cyber bystanders. Hedonistic moral reasoning is used by adolescents who are unable to take others' perspective and are self-focused (Palmer, 2005). Thus, if behaving in prosocial ways does not benefit them, they remain passive, as our results have showed. Further, they use moral disengagement strategies as well, to justify their passivity and ignorance. This is in line with previous studies' results (Bastiaensens et al., 2014; DeSmet et al., 2012, 2014; Huang & Chou, 2010; Macháková et al., 2013; Price et al., 2014) that have also showed the role of moral disengagement behind bystanders' passivity. In order to be able to help others in need, adolescents need to regulate the feelings of personal distress that they feel because of witnessing someone else's distress. If they are not able to regulate their negative feeling adaptively, they ignore or avoid the situation that evoked the negative feelings (Eisenberg, 2000). This mechanism explains why difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions prevents adolescents from intervening in cyberbullying situations. Additionally, our results also showed, however only a tendency-like result, that personal distress decreased the likelihood of ignoring cyber bystander reaction. This also supports our theory about how the difficulty to

regulate one's personal distress while witnessing cyberbullying incidents may result in passiveness. Further, needs oriented prosocial moral reasoning decreased the likelihood of ignoring reaction. As needs oriented moral reasoning is associated with heightened empathic feelings (Carlo et al., 1992), concern for others' needs and sympathy guide adolescents' behaviour. Hence, their behaviour is more prosocial than those adolescents' who use hedonistic reasoning. However, our results showed no further significant effect of empathy, nor social desirability on passive or ignoring cyber bystander behaviour.

5.4.2. Determinants of Cyberbullying Roles.

We hypothesized that low levels of moral development, difficulties regarding empathic and emotion regulation skills, and the use of moral disengagement strategies are risk factors of cyberbullying perpetration. In line with our assumptions, our results demonstrated that older adolescents who use moral disengagement strategies, have difficulties with accessing effective emotion regulation strategies when experiencing negative emotions, and with understanding of emotions are at risk to engage in cyberbullying as perpetrators. Previous studies have showed evidence on cyberbullying perpetrators' emotion regulation difficulties (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Ganesini & Brighi, 2015; Vranjes et al., 2018), as well as on their heightened levels of moral disengagement (Bussey et al., 2015; Renati, et al., 2012; Robson & Witenberg, 2013; Wang et al., 2016). Moreover, our results showed the specific emotion regulation difficulties that cyberbullying perpetrators experience: Adolescents who cannot understand, process, and regulate their emotions are likely to act out, redirect their negative emotions towards others, i.e. the victim of their cyberbullying behaviour. Further, they might use moral disengagement strategies not just to justify their acts, but also to avoid feelings of guilt and shame that they are unable to process and regulate. Further, adolescents who have difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions and use stereotypic prosocial moral reasoning are less likely to engage in cyberbullying as perpetrators. Although previous studies (Baroncelli & Ciucci, 2014; den Hamer & Konijn, 2016; Ganesini & Brighi, 2015; Vranjes et al., 2018) have found that emotion regulation difficulties increase the risk of cyberbullying perpetration, our results showed that one specific difficulty (i.e. difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions) decreases the likelihood of cyberbullying perpetration. As bullying can be considered as a proactive, goal-directed aggressive behaviour (Coie et al., 1991), this result might implicate that when an adolescent has a specific goal (e.g. higher social status, humiliate a certain person), unregulated negative emotions might prevent him or her

from behaving aggressively. Stereotypic, approval oriented prosocial reasoning also prevents adolescents from perpetrating cyberbullying. As adolescents' concern is to be approved, and their behaviour to be accepted and praised, they will not behave in ways that would evoke disapproval in others. Although previous studies have demonstrated lack of empathic skills characterizing cyberbullying perpetrators (Ang & Gogh, 2010; Brewer & Kerslake, 2015; Del Rey et al., 2016; Steffgen et al., 2009, 2011), our results showed no evidence supporting the role of empathy in cyberbullying perpetration. Probably, morality and emotion regulation difficulties have a more prominent role in cyberbullying perpetration than empathy.

We assumed that as cyberbullying perpetrators, cybervictims also lack socio-emotional skills, i.e. empathic and emotion regulation skills. Whereas, morality and moral disengagement do not influence cybervictimization. Although, our results showed that older age, moral disengagement, and difficulties with accessing effective emotion regulation strategies when experiencing negative emotions, with understanding of emotions, and with acceptance of emotions increased the risk of cybervictimization. Similarly to previous results (Gianesini & Brighi, 2015), we have also found that adolescents who are unable to understand, accept, and regulate their emotions are more likely to be cybervictimized. Emotion regulation is crucial to successfully fit in social groups (Eisenberg & Fabes, 1992; Gross & John, 2003), consequently lacking adaptive emotion regulation skills might result in risk behaviours like oversharing, talking about personal information, etc. Others might use these information and sensitive content against adolescents, resulting in their cybervictimization. Contrary to our assumptions, moral disengagement also increases the risk of cybervictimization. Previous studies (Renati et al., 2012; Marín-López et al., 2020) have also found higher levels of moral disengagement in cybervictims. Victims might use moral disengagement strategies to justify others' behaviour towards them, relocate the responsibility or avoid the feelings of guilt and shame. Additionally, difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions and stereotypic prosocial moral reasoning serve as protective factors against cybervictimization. Our results demonstrated that those adolescents who are unable to act when they are experiencing negative emotions, e.g. post about it online (i.e. sadfishing), are less likely to be cybervictimized. In addition, stereotypic, approval oriented moral reasoning is also a protecting factor. As adolescents focus on behaving in ways that others approve of, others are less likely to pick on them, i.e. cyberbullying them. In contrast to our hypothesis, our results showed no evidence on the role of empathy in cybervictimization. Indeed, results regarding the role of empathy in cybervictimization are inconsistent. Some studies have found that

cybervictims have difficulties concerning empathic skills (e.g. Schultze-Krumbholtz & Scheitauer, 2009), others have found that they are rather sensitive to others' emotional states (Almeida et al., 2012; Casas et al., 2013; Del Rey et al., 2016). Thus, the association between empathy and cybervictimization still needs further research.

At last, our results showed that older adolescents with high moral disengagement, having difficulties with accessing effective emotion regulation strategies when experiencing negative emotions are at risk of engaging in cyberbullying as both perpetrators and victims. This result is in line with our hypothesis, as our results demonstrate that emotion regulation difficulties and moral disengagement serve as a link between cyberbullying perpetration and cybervictimization. Indeed, the inability to regulate one's negative emotions, the justification of immoral acts, and the avoidance of feelings of guilt and shame might explain why cybervictimized adolescents perpetrate cyberbullying subsequently (den Hamer & Konijn, 2016). This also can be a reason why cyberbullies are subsequently cybervictimized: If they do not feel responsible or guilty for their acts, they are more likely to repeat their aggressive acts online. Therefore, their peers may retaliate with aggressive actions, like threatening the cyberbully or posting humiliating pictures/videos about them, i.e. causing their cybervictimization. Our results also support previous results that have found moral disengagement linking cybervictimization to cyberbullying perpetration (Eraslan-Çapan & Bakioğlu, 2020; Renati et al., 2012), but because of the cross-sectional design of the studies we do not know the direction of causality. In addition, difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions and stereotypic moral reasoning served as protective factors against engaging in cyberbullying as both perpetrators and victims. Indeed, if adolescents are prone to behave in ways that others approve of and they are not able to engage in acts while experiencing negative emotions, they are not likely to engage in cyberbullying both as perpetrators and victims. As cyberbullying is a behaviour that causes disapproval in others (Pabian et al., 2016) and it can be a goal-oriented, proactive aggressive behaviour (Coie et al., 1991), they would be unable to carry out while experiencing overwhelming negative emotions. However, empathy had no significant effect on engagement in cyberbullying as both perpetrators and victims. Hence, the association between cyberbullying and empathy still needs further clarification and research using a strict definitional criteria and standardized measures.

5.4.3. Limitations.

Although, our results demonstrated relevant information about adolescents' cyber bystander and cyberbullying behaviours, some limitations of our research need to be addressed. First, because of opportunity sampling the participants were not representative of Hungary's adolescent population. In addition, the findings are based on a cross-sectional design study that limited the exploration of the developmental effects. Second, a pilot study of the modified PROM (Carlo et al., 1992) would have helped to avoid some limitations of the method, concerning its reliability and validity. The participants did not give consistent answers throughout the four situations on how they would react to the situations. As adolescents' moral behaviour depends on the perceived severity of the situation (Smetana & Turiel, 2003), we should have explored how they perceive the seriousness of the situations used and we should have ensured that all the situations are considered the same in their seriousness by adolescents. The subscales measuring hedonistic reasoning, needs oriented reasoning and stereotypic reasoning also showed quite low reliability. Additionally, the different cyber bystander types assessed by this method were limited as there are several more responses possible from cyber bystanders (e.g. antisocial intervention defending the victim, Moxey & Bussey, 2020). Thus, further research should investigate more elaborated types of cyber bystander reactions and their associations with morality and socio-emotional skills. As well as, the modified PROM needs more elaboration and research in order to be reliably used in future research. Further, the reliability of the Cyber Bullying Moral Disengagement Scale, the Interpersonal Reactivity Index, and four subscales of Difficulties with Emotion Regulation Scale, i.e. strategies, non-acceptance, awareness and clarity was also quite low. The low reliability scores could affect the results of the analyses: The multinomial logistic regression model predicted cybervictimization and cyberbullying perpetration poorly. Additionally, the correlation estimates among the tested variables were also weak, though the linear regression models showed stronger results.

5.4.4. Conclusions.

Overall, our results demonstrated the role of moral development, moral disengagement, emotion regulation and empathy in cyber bystander behaviour. Importantly, our results showed that adolescents using moral disengagement and hedonistic prosocial moral reasoning are prone to respond antisocially or passively to cyberbullying situations. Whereas, stereotypic, approval oriented moral reasoning and impulsivity increased the likelihood of a prosocial response. Thus,

our results support that intervention or prevention programs targeting peer support should focus on morality and the reduction of justification strategies. Additionally, our study also demonstrated the role of moral disengagement, moral development, and emotion regulation underlying cyberbullying engagement. Cyberbullying perpetrators, cybervictims, and bully-victims all have emotion regulation difficulties and use moral disengagement strategies whereas stereotypic, approval oriented moral reasoning is a protective factor against cyberbullying engagement. Consequently, cyberbullying prevention and intervention should target adolescents' regulation skills and morality. Summing up the strengths of our study, our research's benefits are twofold. First, we used a new, ecologically valid method to measure cyber bystander behaviour and prosocial moral reasoning that might broaden future research possibilities and increase reliability. Second, our results have implications for practitioners concerning the role of morality and emotion regulation in cyberbullying engagement that might be used as a focus in prevention and intervention programs.

6. FINAL CONCLUSIONS

Based on already existing traditional bullying theories and cyberbullying research evidence, the aim of my doctoral studies was to explore which factors may be part of a comprehensive theory about cyberbullying involvement and may help to understand the dynamics of cyberbullying. Therefore, developmentally, psychologically, and socially relevant factors were included in our research: The studies focused mainly on the effect of socio-emotional skills (i.e. empathy and emotion regulation), moral development (i.e. moral disengagement and prosocial moral reasoning), and social factors (i.e. family functioning and perceived social support) in adolescents' cyberbullying engagement and cyber bystander behaviour.

In the first study, we adapted two questionnaires to enable us to study cyberbullying engagement in the Hungarian adolescent population. Cyber Victim and Bullying Scale (Cetin et al., 2011) and European Cyberbullying Intervention Project Questionnaire (Del Rey et al., 2015) were the scales chosen and psychometrically analysed. As an outcome of the study, we managed to develop the Hungarian adaptation of the chosen questionnaires. According to our results, both questionnaires have strengths and limitations which should be considered before using them in research. Although, CVBS-HU is a more limited measure, whereas ECIPQ has excellent psychometric properties and is also more widely used in international research. The results of this study enabled us to further investigate cyberbullying engagement. However, it is important to note that the overall limitations concerning the definition and measurement of cyberbullying influenced our adaptation process. As there is not a clear definition of cyberbullying yet, the different measurements are assessing cyberbullying involvement based on different definitions, this can also be seen in both questionnaires we have adapted. There is also no consensus on what the criteria of the identification of cyberbullying is. There are theorists who say that even one incident can fit the criteria, others use frequency criteria (e.g. categorizing cyberbullying perpetration/cybervictimization from two or three incidents in a month), again others say that the severity of the cyberbullying incident should matter not the frequency (Menesini & Nocentini, 2009; Várnai et al., 2018). In the absence of a clear definition it is hard to decide which criteria (using the frequency, mean and standard deviation, or the severity) would be the best solution. We have used the mean and standard deviation to create cyberbullying groups throughout the studies. This can also be a faulty measure since it can result in showing lower frequency than other methods and also the '*never*' answer is not zero but one in the scales that also distorts the results. However if we choose the '*two or three times a month*' criteria, that also misses out on the one time severe cybervictimization. So neither

method seems to be right. Moreover, with the rigid assessment techniques of questionnaires the fluidity of cyberbullying roles cannot be assessed. Maybe different measurements with different answer scales should be more useful and informative but this methodological issue goes beyond this doctoral thesis since it was not the aim of this doctoral dissertation to answer all these methodological problems, but still they greatly influence the studies' results and their interpretation.

In the second study based on the SEL theory of traditional bullying, we aimed to explore the role of socio-emotional skills in cyberbullying engagement. Previous research results have already showed evidence on the associations among empathy, emotion regulation, moral disengagement, and cyberbullying involvement, though some results needed some clarification. Thus, we aimed to clarify the role of empathy in cybervictimization as previous results were inconsistent and unclear. We also aimed to find the specific maladaptive cognitive emotion regulation strategies that risk cyberbullying engagement. At last, our aim was to explore whether moral disengagement strategies are used by cyberbullying perpetrators in the absence of adequate socio-emotional skills. Our results demonstrated a pattern of socio-emotional skills underlying cyberbullying engagement: Cyberbullying perpetrators lack empathic skills while they are prone to use moral disengagement and maladaptive emotion regulation strategies, i.e. other blame. Bully-victims also are prone to use moral disengagement strategies while they lack sensitive empathic skills and they also are likely to use other blame, a maladaptive emotion regulation strategy. Cybervictims are also likely to use maladaptive emotion regulation strategies, i.e. self-blame. However, they also use adaptive strategies (i.e. planning) and have quite sensitive empathic skills. Additionally, older adolescents seem to be more likely to be cybervictimized according to our results.

In the third study, social factors were also included besides the socio-emotional skills. The aim was still to explore the role of socio-emotional skills but knowledge from Bronfenbrenner's theory (1989) was also included, i.e. the individual's development and behaviour is influenced by the different levels, e.g. peer and family factors. Thus, we aimed to explore the influence of family functioning, perceived social support from friends and family, and emotion regulation on cyberbullying engagement. During this second research we tested models of cyberbullying perpetration and cybervictimization to explore whether the role of the social factors is direct or is mediated by emotion regulation difficulties. We showed evidence on the importance of family cohesion, perceived parental and peer support and emotion regulation in both cyberbullying perpetration and cybervictimization. Further, our results even supported models

of both type of cyberbullying engagement: Lack of support from peers and imbalanced family cohesion, i.e. enmeshed family cohesion are risk factors of cyberbullying perpetration. Both have a direct effect and also influence cyberbullying perpetration through emotion regulation difficulties, i.e. difficulties with refraining from impulsive behaviour and difficulties with understanding of emotions. Whereas balanced family cohesion seems to be a protective factor against cyberbullying perpetration. Lack of support from peers is also a risk factor in cybervictimization. Additionally, lack of support from family and imbalanced family cohesion, i.e. enmeshed family cohesion also increase the risk of cybervictimization. Both of the latter two have a direct effect on cybervictimization and also an indirect effect through emotion regulation difficulties, i.e. difficulties with refraining from impulsive behaviour, understanding of emotions and accessing effective emotion regulation strategies when experiencing negative emotions. Friend support only has a direct effect on cybervictimization. Further, age had no effect neither in cyberbullying perpetration, nor in cybervictimization.

In the fourth study, besides the socio-emotional skills we aimed to explore the role of morality in cyberbullying engagement as well. Additionally, we also aimed to investigate socio-emotional and moral skills' influence on cyber bystander behaviour not just in cyberbullying involvement. Our results demonstrated that lower levels of moral development, i.e. hedonistic moral reasoning and moral disengagement are risk factors of antisocial cyber bystander behaviour. Hedonistic moral reasoning and moral disengagement also predispose ignorant cyber bystander behaviour, similarly to difficulties with the ability to engage in goal-directed behaviour when experiencing negative emotions. Whereas, stereotypic, approval oriented moral reasoning and impulsivity increase the likelihood of a prosocial cyber bystander behaviour. Additionally, our results also showed socio-emotional and moral skills' effect on cyberbullying perpetration and cybervictimization. Older adolescents who use moral disengagement strategies and have emotion regulation difficulties, i.e. difficulties with accessing effective emotion regulation strategies when experiencing negative emotions, and with understanding of emotions are prone to become cyberbullying perpetrators. Whereas, older age, moral disengagement, and emotion regulation difficulties, i.e. difficulties with accessing effective emotion regulation strategies when experiencing negative emotions, with understanding of emotions, and with acceptance of emotions increased the risk of cybervictimization. Our results also showed the factors that predispose engagement in cyberbullying as both perpetrators and victims: Moral disengagement and emotion regulation difficulties, i.e. difficulties with accessing effective emotion regulation strategies when

experiencing negative emotions increase the likelihood of involvement in cyberbullying as both perpetrator and victim.

Throughout the three studies about the socio-emotional correlates of cyberbullying engagement, it became clear that cyberbullies and bully-victims are deeply similar. This may support that cyberbullies are subsequently cybervictimized, however because of the cross sectional nature of the studies we cannot draw such a conclusion. Although, our results show that they are characterized by the same difficulties regarding their empathic skills and emotion regulation (they both use other blame and have difficulties with accessing emotion regulation strategies when experiencing negative emotions), and both cyberbullies and bully-victims tend to use moral disengagement strategies. Furthermore, cyberbullying perpetrators and cybervictims are also similar in some social and socio-emotional factors. Both cyberbullying perpetrators and cybervictims lack social support from peers and imbalanced family cohesion characterizes their family. Furthermore, in both the third and fourth study they had mostly the same emotion regulation difficulties: difficulties with accessing effective emotion regulation strategies when experiencing negative emotions, with understanding of emotions and refraining from impulsive behaviour. In the fourth study, all three groups involved in cyberbullying somehow (cyberbullies, cybervictims, bully-victims) were hardly distinguishable. These results coincide with the fluidity of cyberbullying roles (DeSmet et al., 2014; DeSmet et al., 2016; Van Cleemput et al., 2014): in one cyberbullying incident youngsters can be the perpetrators, in another one cybervictimized, resulting in the entwined roles. However, with the cross sectional studies static states were assessed only, not how these roles change dynamically from one specific social context to another. This may be why the results are inconsistent, the estimates weak, and the factors very similar among the involved groups. In the different cyberbullying situations or in the different social contexts different factors may weigh in when adolescents react or engage resulting in the very different roles they take in the different contexts. This dynamic is what most of the cyberbullying research misses to really explore and understand, including ours.

An aim of the studies was to explore developmentally, psychologically, and socially relevant factors that can be part of a comprehensive theory of cyberbullying involvement. We have chosen the studied variables based on previous traditional bullying theories and Bronfenbrenner's theory (1989) as well. Our results support the relevance of SEL theory (Durlak et al., 2011; Smith & Low, 2013) in cyberbullying involvement as well. We found a pattern of socio-emotional skills (i.e. difficulties with emotion regulation, lack of empathic

skills) and moral disengagement underlying cyberbullying perpetration, cybervictimization, and the bully-victim role as well. Furthermore, our results also show that Bronfenbrenner's theory (1989) has relevance in the explanation of cyberbullying. Our results showed the individual factors that influence cyberbullying engagement (e.g. empathy, moral development, moral disengagement, and emotion regulation), and also a little about the effects of the microsystem level (i.e. family and peer effects). However, this would need more research with the inclusion of further levels' factors like peer norms about cyberbullying, the cultural view on bullying behaviour, the school's policy, digital skills of the environment and the individual, etc. Thinking further, the General Aggression Model (GAM, Anderson & Bushman, 2002) can also be used when trying to understand the dynamics of cyberbullying. Our research only included the proximate personal factors (e.g. moral disengagement) from the model but the distal biological modifiers (i.e. the hormonal, neural development during adolescence), the distal environmental modifiers (e.g. peer norms), and the proximate situation factors could help to understand the dynamically changing roles in cyberbullying involvement and how the involvement can be reliant on the social, situational context. Further, the lack of socio-emotional and moral skills also fit the GAM model because they can be a reason why the feedback mechanism does not work and thus youngsters engage in cyberbullying incidents repeatedly. Although the support of these theories needs further research with the inclusion of more situational and peer variables to understand more about the dynamics of cyberbullying as our results are cross sectional and only partly support the theories. Despite not supporting a comprehensive theory, our results still have some implications for prevention and intervention.

6.1. Implications for cyberbullying prevention and intervention

The results of my doctoral studies showed patterns of individual and social factors underlying cyberbullying engagement and cyber bystander behaviour. These outcomes have implications not only for future research, but also for the practice because the results of specifically targeted research can help the development of prevention and intervention programs. Such programs became exceedingly important as cyberbullying presents a greater challenge for adolescents, their parents and schools.

Our results showed evidence on lack of empathic skills characterizing both cyberbullying perpetrators and bully-victims. These results suggest that targeted empathy training can prevent engagement in cyberbullying both as perpetrators and as bully-victims. Trying to enhance empathic feelings and perspective taking of cyberbullying perpetrators may prevent them from

repeating their harmful acts and thus preventing their subsequent cybervictimization, i.e. becoming a bully-victim. If they become able to feel the vicarious emotions of others that may avert them from later engagement in harmful acts. Empathy training has already been showed to be an essential part of anti-bullying programs. Previous studies have showed that as a results of empathy training, traditional bullying behaviours decreased among students (Garandean et al., 2021; Sahin, 2012b; Stanbury et al., 2009) and this effect was still present after 60 days from the educational program (Sahin, 2012b). Thus, based on the results of research and the evaluation of empathy training in traditional bullying prevention, empathy based programs could be an effective tool in cyberbullying intervention as well.

According to our results, difficulties with emotion regulation and maladaptive emotion regulation strategies affect cyberbullying engagement: cyberbullying perpetrators, cybervictims and bully-victims all have problems related to the understanding and regulation of emotional states. Social emotional learning (SEL) includes empathy training, emotion management training, social competence training, and social problem solving training. With the help of SEL students can learn social and emotional skills that help them to cope with the challenges of their social environments (Smith & Low, 2013). SEL and emotional intelligence training were shown to decrease students' their engagement in traditional bullying behaviours both as perpetrators and victims (Espelage et al., 2015; Lang, 2018). One reason of these programs' effectiveness is that they help students to understand and manage their emotional states so they won't engage in alternative behaviours (e.g. bullying) to cope in maladaptive ways with their unregulated emotional states. Hence, based on the aforementioned knowledge, SEL and emotional intelligence training could help the emotion regulation difficulties in cyberbullying related programs as well. Additionally, ENABLE also includes a SEL module and is implemented in Hungarian schools, so the inclusion of cyberbullying in the anti-bullying module would be plausible and this is already a plan of the team behind ENABLE.

The results of our studies showed moral disengagement having a prominent role both in cyberbullying engagement and cyber bystander behaviour. Cyberbullying perpetrators, cybervictims, bully-victims, antisocial and ignorant cyber bystanders all seems to be characterized by the usage of moral disengagement strategies. Furthermore, antisocial and ignorant bystanders also lack higher levels of moral reasoning. Consequently, the inclusion of moral thinking could help tackling cyberbullying and enhance prosocial reaction from cyber bystanders. Morality is already involved in anti-bullying programs implicitly: The main principles of bullying prevention include developing feelings of personal responsibility in

bystanders, so they feel prone to intervene when bullying incidents happen. Additionally, the programs contain the establishment of anti-bullying norms and rules that apply for everyone in the class and in the school (Feinberg, 2003). However, morality could be explicitly used in anti-bullying programs as well, as Webber (2017) suggested: Classical moral theories could be used to analyse anti-bullying videos, to establish anti-bullying rules and to help the development of moral thinking during adolescence using cooperative learning techniques. By helping moral thinking, bystanders' feelings of responsibility to help cybervictims could evolve. Whereas, by decreasing the use of moral disengagement strategies cyberbullying perpetrators would feel the moral consequences of their act, e.g. feelings of guilt, which could prevent them from engaging in cyberbullying acts repeatedly. This could be a new direction to be included in anti-cyberbullying programs. Furthermore, moral disengagement is also covered in ENABLE as a part of the SEL module, so our results about moral disengagement also support the inclusion of cyberbullying in the anti-bullying module of ENABLE.

Besides the individual factors, our results showed the importance of social environment, i.e. family and peers in cyberbullying involvement. Based on our and the previous studies' results both peers and family should be involved in anti-cyberbullying programs. As during adolescence peers have a significant role (Hartup & Stevens, 1997), their involvement in the anti-bullying programs could enhance their effectiveness. Indeed, peer mediation, peer support and positive bystander intervention seem to be helping to tackle bullying in schools (Ttofi & Farrington, 2012). If peers would be able to give support to cope with the consequences of cyberbullying, cybervictims' subsequent cyberbullying perpetration could be avoided. Further, if they could prosocially intervene, it could prevent cyberbullying perpetrators from repeating their aggressive behaviours. So, the inclusion of peers in anti-cyberbullying programs could avert the severe consequences of cyberbullying engagement. Although, it is important to note that it has been found that programs including peers have statistically smaller impact (Smith et al., 2012). Moreover, education of parents could also help anti-cyberbullying programs. Parents should give space to the adolescents to have bigger autonomy, whereas they also should monitor them from a safe distance: Digital parenting principles advice parents to create Internet usage rules together with their children, include them in the decision making about these rules, help them to recognize the dangers of the Internet, show them the safety and privacy setting but leave them to try to use the Internet responsibly. Over controlling the Internet usage could lead to resistance and rebellious behaviour in adolescents. Controlling also carries the message that parents lack digital knowledge hence they fear for their children. As a result of this digital

parenting style, adolescents are less likely to ask for help when they experience negative incidents on the Internet and they are more likely to engage in risk behaviours (Blum-Ross & Livingstone, 2017; Livingstone & Byrne, 2018; Livingstone et al., 2017). Consequently, the digital education of parents could be a critical part of anti-cyberbullying programs, so parents learn how to prevent their children's cyberbullying engagement and so they become able to provide them support (both emotional and material) subsequent of their involvement in cyberbullying.

6.2. Overall Limitations

The design of the studies does not enable us to generalize our results to the Hungarian adolescent population: The participants of our research were not representative of the Hungarian adolescent population. Additionally, all the studies were cross-sectional, so we do not have information on how the temporal developmental changes affect cyberbullying engagement. Moreover, because of the cross sectional nature of the studies we do not know the direction of the causal relationships among the variables, hence there is a certain circularity in the reasoning about our results, e.g. we do not know whether the lack of peer support caused cybervictimization or the lack of peer support was a subsequent event of cybervictimization. Besides these methodological issues it is important to note that there is a debate on the assessment of cyberbullying engagement, a clear consensual definition of cyberbullying has not been established so far, several measures exist to assess cyberbullying engagement (Berne et al., 2013). We used CVBS-HU and ECIPQ but both of these questionnaires have limitations and do not operationalize all of the characteristics of cyberbullying. We did not manage to clarify the role of empathy as in the third research we found it to be a significant factor in cyberbullying engagement but in the fourth study empathy had no effect. The reason of these inconsistent results can lie in the different measurement used in the two studies: Different operationalisations of cyberbullying engagement were used in the two studies. As well as, the Interpersonal Reactivity Index has quite low reliability that also could influence our results. Moreover, the reliability of the scales used was a limitation in almost all of our studies as some subscales and/or scales were less reliable than others and this could influence the results throughout the studies and to be the cause behind the low estimates in the correlations and regression analyses. At last, we did not include variables that would have helped to get a clearer picture, such variables are traditional bullying involvement, digital skills and knowledge of both parents and youngsters, and peer variables, e.g. peer norms about bullying.

6.3. Final Conclusion

Despite the limitations of the studies, they provide valuable information on the psychological and social background of cyberbullying engagement in adolescence: The results provide evidence on the importance of socio-emotional skills in cyberbullying; both empathy and emotion regulation play a prominent role in cyberbullying. Furthermore, the role of moral disengagement and its relation to the socio-emotional skills was showed. The importance of family and peers was also emphasized by our results. All the aforementioned results have implications for future research and also for practice, i.e. anti-cyberbullying programs. The role of emotion regulation, moral disengagement, and moral development was not only showed in cyberbullying roles, but also in cyber bystander behaviour. The research of morality related to cyber bystanders behaviour can be a meaningful direction for cyberbullying research since it is not widely studied yet and it would be a new turn for anti-bullying programs as well. Based on the results of our studies and previously conducted ones, both research (especially longitudinal designed ones) and the development of research based anti-cyberbullying programs would be exceedingly important in the future.

REFERENCES

- Achenbach, T. M., & Edelbrock, C. (1991). Child behavior checklist. *Burlington (Vt)*, 7, 371-392.
- Adams, G. R., & Berzonsky, M. D. (2003). Introduction by the Editors In G. R. Adams & M. D. Berzonsky (Eds.) *Blackwell Handbook of Adolescence* (pp. xxi-xxvi). Blackwell Publishing Ltd.
- Alhujaili, A., Karwowski, W., Wan, T. T., & Hancock, P. (2020). Affective and Stress Consequences of Cyberbullying. *Symmetry*, 12(9), 1536.
- Allison, K. R., & Bussey, K. (2016). Cyber-bystanding in context: A review of the literature on witnesses' responses to cyberbullying. *Children and Youth Services Review*, 65, 183-194.
- Almeida, A., Correia, I., Marinho, S., & García, D. (2012). Virtual but not less real: A study of cyberbullying and its relations to moral disengagement and empathy. In Q. Li, D. Cross, & P. K. Smith (Eds.), *Cyberbullying in the Global Playground: Research from International Perspectives* (pp. 223-244). Wiley-Blackwell
- Altman, D. G., & Bland, J. M. (1995). Statistics notes: the normal distribution. *Bmj*, 310(6975), 298.
- Álvarez-García, D., Barreiro-Collazo, A., Núñez, J. C., & Dobarro, A. (2016). Validity and reliability of the Cyber-aggression Questionnaire for Adolescents (CYBA). *The European Journal of Psychology Applied to Legal Context*, 8(2), 69-77.
- Álvarez-García, D., Núñez, J. C., Barreiro-Collazo, A., & García, T. (2017). Validation of the Cybervictimization Questionnaire (CYVIC) for adolescents. *Computers in Human Behavior*, 70, 270-281.
- Álvarez-García, D., Pérez, J. C. N., González, A. D., & Pérez, C. R. (2015). Risk factors associated with cybervictimization in adolescence. *International Journal of Clinical and Health Psychology*, 15(3), 226-235.
- Amendola, S., Spensieri, V., Guidetti, V., & Cerutti, R. (2019). The relationship between difficulties in emotion regulation and dysfunctional technology use among adolescents. *J. Psychopathol*, 25, 10-17.
- Anderson, J., Bresnahan, M., & Musatics, C. (2014). Combating weight-based cyberbullying on Facebook with the dissenter effect. *Cyberpsychology, Behavior, and Social Networking*, 17(5), 281-286.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27-51.
- Ang, R. P., & Goh, D.H. (2010). Cyberbullying among adolescents: The role of affective and cognitive empathy, and gender. *Child Psychiatry and Human Development*, 41, 387-397.
- Antoniadou, N., Kokkinos, C. M., & Markos, A. (2016). Possible common correlates between bullying and cyber-bullying among adolescents. *Psicología Educativa*, 22(1), 27-38.

- Arató, N., Zsidó, A. N., Lénárd, K., & Lábadi, B. (2019). Az internetes zaklatás áldozata és elkövetője kérdőív (CVBS-HU) és az Európai Cyberbullying Intervenciók Projekt Kérdőív (ECIPQ) magyar adaptációja. *Iskolakultúra*, 29(12), 81-110.
- Arató N., Zsidó A. N., Lénárd K., & Lábadi B. (2020). Cybervictimization and Cyberbullying: The Role of Socio-Emotional Skills. *Frontiers in Psychiatry*, 11
- Archibald, A. B., Graber, J. A., & Brooks-Gunn, J. (2003). Pubertal processes and physiological growth in adolescence. In G. R. Adams, M. D. Berzonsky (Eds.) *Blackwell Handbook of Adolescence*, (pp. 24-47.) Blackwell Publishing
- Aricak, O. T., & Ozbay, A. (2016). Investigation of the relationship between cyberbullying, cybervictimization, alexithymia and anger expression styles among adolescents. *Computers in Human Behavior*, 55, 278-285.
- Baiocco, R., Cacioppo, M., Laghi, F., & Tafà, M. (2013). Factorial and construct validity of FACES IV among Italian adolescents. *Journal of Child and Family Studies*, 22(7), 962-970.
- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Mechanisms of moral disengagement in the exercise of moral agency. *Journal of Personality and Social Psychology*, 71(2), 364-374.
- Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3(3), 193-209.
- Banerjee, R., Robinson, C., & Smalley, D. (2010). Evaluation of the Beatbullying peer mentoring programme. *Report for Beatbullying. University of Sussex*.
- Baldry, A. C., Farrington, D. P., & Sorrentino, A. (2015). "Am I at risk of cyberbullying"? A narrative review and conceptual framework for research on risk of cyberbullying and cybervictimization: The risk and needs assessment approach. *Aggression and Violent Behavior*, 23, 36-51.
- Baranyai B., & Reményiné Csekeő B. (2019). *A serdülők internetes közösségeiről és kapcsolatairól.* https://kek-vonal.hu/wp-content/uploads/2020/08/serdulok_az_interneten_oravazlatok.pdf
- Barlińska, J., Szuster, A., & Winiewski, M. (2013). Cyberbullying among adolescent bystanders: Role of the communication medium, form of violence, and empathy. *Journal of Community & Applied Social Psychology*, 23(1), 37-51.
- Barlińska, J., Szuster, A., & Winiewski, M. (2015). The role of short-and long-term cognitive empathy activation in preventing cyberbystander reinforcing cyberbullying behavior. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 241-244.
- Barlińska, J., Szuster, A., & Winiewski, M. (2018). Cyberbullying among adolescent bystanders: Role of affective versus cognitive empathy in increasing prosocial cyberbystander behavior. *Frontiers in Psychology*, 9, 799.
- Baroncelli, A., & Ciucci, E. (2014). Unique effects of different components of trait emotional intelligence in traditional bullying and cyberbullying. *Journal of Adolescence*, 37(6), 807-815.

- Batson, C. D., Fultz, J., & Schoenrade, P. A. (1987). Distress and empathy: Two qualitatively distinct vicarious emotions with different motivational consequences. *Journal of Personality*, 55(1), 19-39.
- Bastiaensens, S., Vandebosch, H., Poels, K., Van Cleemput, K., DeSmet, A., & De Bourdeaudhuij, I. (2014). Cyberbullying on social network sites. An experimental study into bystanders' behavioural intentions to help the victim or reinforce the bully. *Computers in Human Behavior*, 31, 259-271.
- Bastiaensens, S., Vandebosch, H., Poels, K., Van Cleemput, K., DeSmet, A., & De Bourdeaudhuij, I. (2015). 'Can I afford to help?' How affordances of communication modalities guide bystanders' helping intentions towards harassment on social network sites. *Behaviour & Information Technology*, 34(4), 425-435.
- Baumrind, D. (1991). Effective parenting during the early adolescent transition. In P. A. Cowan & M. Hetherington (Eds.), *Family transitions* (pp. 111–163). Erlbaum.
- Bayraktar, F., Machackova, H., Dedkova, L., Cerna, A., & Ševčíková, A. (2015). Cyberbullying: The discriminant factors among cyberbullies, cybervictims, and cyberbully-victims in a Czech adolescent sample. *Journal of Interpersonal Violence*, 30(18), 3192-3216.
- Beckman, L., Stenbeck, M., & Hagquist, C. (2016). Disability in relation to different peer-victimization groups and psychosomatic problems. *Children & Schools*, 38(3), 153-161.
- Benders, D. S. (2012). School Climate and Cyber-Bullying. Union College- Educational Studies Unit
- Beran, T., & Li, Q. (2005). Cyber-harassment: A study of a new method for an old behavior. *Journal of Educational Computing Research*, 32(3), 265.
- Beran, T., & Li, Q. (2007). The relationship between cyberbullying and school bullying. *The Journal of Student Wellbeing*, 1(2), 16-33.
- Berne, S., Frisé, A., Schultze-Krumbholz, Scheithauer, H., Naruskov, K., Luik, P., Katzer, C., A., Erentaite, R., Zukauskiene, R. (2013). Cyberbullying assessment instruments: A systematic review. *Aggression and Violent Behavior*, 18, 320-334.
- Bernstein, J. Y., & Watson, M. W. (1997). Children who are targets of bullying: A victim pattern. *Journal of Interpersonal Violence*, 12(4), 483-498.
- Björkqvist, K., Lagerspetz, K. M., & Kaukiainen, A. (1992). Do girls manipulate and boys fight? Developmental trends in regard to direct and indirect aggression. *Aggressive Behavior*, 18(2), 117-127.
- Blum-Ross, A., & Livingstone, S. (2017). "Sharenting," parent blogging, and the boundaries of the digital self. *Popular Communication*, 15(2), 110-125.
- Bonanno, R. A. & Hymel, S. (2013). Cyber Bullying and Internalizing Difficulties: Above and Beyond the Impact of Traditional Forms of Bullying. *Journal of Youth and Adolescence*, 42, 685-697.

- Bottino, S. M. B., Bottino, C., Regina, C. G., Correia, A. V. L., & Ribeiro, W. S. (2015). Cyberbullying and adolescent mental health: systematic review. *Cadernos de saude publica*, *31*, 463-475.
- Brewer, G., Kerslake, J. (2015). Cyberbullying, self-esteem, empathy and loneliness. *Computers in Human Behavior*, *48*, 255-260.
- Brochado, S., Soares, S., & Fraga, S. (2017). A scoping review on studies of cyberbullying prevalence among adolescents. *Trauma, Violence, & Abuse*, *18*(5), 523-531.
- Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.) *Annals of Child Development* (pp. 197-249). JAI Press.
- Buchanan, C. M., Eccles, J. S., & Becker, J. B. (1992). Are adolescents the victims of raging hormones: Evidence for activational effects of hormones on moods and behavior at adolescence. *Psychological Bulletin*, *111*(1), 62-107.
- Buelga, S., Martínez-Ferrer, B., & Cava, M. J. (2017). Differences in family climate and family communication among cyberbullies, cybervictims, and cyber bully-victims in adolescents. *Computers in Human Behavior*, *76*, 164-173.
- Buelga, S., Martínez-Ferrer, B., & Musitu, G. (2016). Family relationships and cyberbullying. In R. Navarro, S. Yubero, & E. Larranga (Eds.) *Cyberbullying Across the Globe: Gender, Family, and Mental Health* (pp. 99-114). Switzerland: Springer International Publishing.
- Bussey, K., Fitzpatrick, S., & Raman, A. (2015). The role of moral disengagement and self-efficacy in cyberbullying. *Journal of School Violence*, *14*(1), 30-46.
- Bussey, K., Luo, A., Fitzpatrick, S., & Allison, K. (2020). Defending victims of cyberbullying: The role of self-efficacy and moral disengagement. *Journal of School Psychology*, *78*, 1-12.
- Calvete, E., Orue, I., Estévez, A., Villardón, L., & Padilla, P. (2010). Cyberbullying in adolescents: Modalities and aggressors' profile. *Computers in Human Behavior*, *26*(5), 1128-1135.
- Campbell, M. (2013). Loneliness, social anxiety and bullying victimization in young people: A literature review. *Psychology and Education*, *50*(3-4), 1-10.
- Cappadocia, M. C., Pepler, D., Cummings, J. G., & Craig, W. (2012). Individual motivations and characteristics associated with bystander intervention during bullying episodes among children and youth. *Canadian Journal of School Psychology*, *27*(3), 201-216.
- Caravita, S. C., Di Blasio, P., & Salmivalli, C. (2009). Unique and interactive effects of empathy and social status on involvement in bullying. *Social Development*, *18*(1), 140-163.
- Carlo, G., Eisenberg, N., & Knight, G. P. (1992). An objective measure of adolescents' prosocial moral reasoning. *Journal of Research on Adolescence*, *2*(4), 331-349.
- Carney, A. G., & Merrell, K. W. (2001). Bullying in schools: Perspectives on understanding and preventing an international problem. *School Psychology International*, *22*(3), 364-382.

- Casas, J. A., Del Rey, R., Ortega-Ruiz, R. (2013). Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior*, 29: 580-587.
- Cashwell, C. S., & Vacc, N. A. (1996). Family functioning and risk behaviors: Influences on adolescent delinquency. *The School Counselor*, 44(2), 105-114.
- Cassidy, W., Faucher, C., & Jackson, M. (2013). Cyberbullying among youth: A comprehensive review of current international research and its implications and application to policy and practice. *School Psychology International*, 34(6), 575-612.
- Cetin, B., Yaman, E., Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computers and Education*, 57: 2261-2271.
- Chang, F. C., Chiu, C. H., Miao, N. F., Chen, P. H., Lee, C. M., Huang, T. F., & Pan, Y. C. (2015). Online gaming and risks predict cyberbullying perpetration and victimization in adolescents. *International Journal of Public Health*, 60(2), 257-266.
- Chen, L., Ho, S. S., & Lwin, M. O. (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society*, 19(8), 1194-1213.
- Cho, Y. K., & Yoo, J. W. (2017). Cyberbullying, internet and SNS usage types, and perceived social support: A comparison of different age groups. *Information, Communication & Society*, 20(10), 1464-1481.
- Chow, C. M., Ruhl, H., & Buhrmester, D. (2013). The mediating role of interpersonal competence between adolescents' empathy and friendship quality: A dyadic approach. *Journal of Adolescence*, 36(1), 191-200.
- Claes, L., Luyckx, K., Baetens, I., Van de Ven, M., & Witteman, C. (2015). Bullying and victimization, depressive mood, and non-suicidal self-injury in adolescents: The moderating role of parental support. *Journal of Child and Family Studies*, 24(11), 3363-3371.
- Coie, J. D., Dodge, K. A., Terry, R., & Wright, V. (1991). The role of aggression in peer relations: An analysis of aggression episodes in boys' play groups. *Child development*, 62(4), 812-826.
- Colby, A., & Kohlberg, K. (Eds.) (1987). *The measurement of moral judgment* (2 Vols.). New York: Cambridge University Press.
- Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: a meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65.
- Cooke, B. D., Rossmann, M. M., McCubbin, H. I., & Patterson, J. M. (1988). Examining the definition and assessment of social support: A resource for individuals and families. *Family relations*, 211-216.
- Corcoran, L., McGuckin, C., & Prentice, G. (2015). Cyberbullying or Cyber Aggression?: A Review of Existing Definitions of Cyber-Based Peer-to-Peer Aggression. *Societies*, 5, 245-255.

- Craig, W. M. (1998). The relationship among bullying, victimization, depression, anxiety, and aggression in elementary school children. *Personality and Individual Differences*, 24(1), 123-130.
- Craig, W., Harel-Fisch, Y., Fogel-Grinvald, H., Dostaler, S., Hetland, J., Simons-Morton, B., ... & Pickett, W. (2009). A cross-national profile of bullying and victimization among adolescents in 40 countries. *International Journal of Public Health*, 54(2), 216-224.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development*, 66(3), 710-722.
- Cross, D., Barnes, A., Papageorgiou, A., Hadwen, K., Hearn, L., & Lester, L. (2015). A social-ecological framework for understanding and reducing cyberbullying behaviours. *Aggression and Violent Behavior*, 23, 109-117.
- Cummings, M. E., Goeke-Morey, M. C., & Papp, L. M. (2003). Children's responses to everyday marital conflict tactics in the home. *Child Development*, 74(6), 1918-1929.
- Cummings, J. N., Lee, J. B., & Kraut, R. (2006). Communication technology and friendship: The transition from high school to college. In R. Kraut, M. Brynin & S. Kiesler (Eds.), *Computers, Phones, and the Internet: The Social Impact of Information Technology*. Oxford University Press.
- Currie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T., & Richter, M. (2008). Researching health inequalities in adolescents: the development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. *Social Science & Medicine*, 66(6), 1429-1436.
- Davis, M.H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, 44, 113-123.
- Davis, M. H. (2018). *Empathy: A social psychological approach*. Routledge.
- De Caroli, M. E., & Sagone, E. (2014). Mechanisms of moral disengagement: An analysis from early adolescence to youth. *Procedia-Social and Behavioral Sciences*, 140, 312-317.
- Dehue, F., Bolman, C., & Vollink, T. (2008). Cyberbullying: Youngsters' experiences and parental perception. *CyberPsychology & Behavior*, 11, 217-223.
- Dehue, F., Bolman, C., Vollink, T., & Pouwelse, M. (2012). Cyberbullying and traditional bullying in relation to adolescents' perception of parenting. *Journal of CyberTherapy and Rehabilitation*, 5(1), 25-34.
- Dekovic, M., Wissink, I., & Meijer, A. (2004). The role of family and peer relations in adolescent antisocial behaviour: Comparison of four ethnic groups. *Journal of Adolescence*, 27, 497-514.
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheitauer, H., Smith, P., Thompson, F., Barkoukis, V., Tsorbatzoudis, H., Brighi, A., Guarini, A., Pyzalski, J., & Plichta, P. (2015). Structural Validation and Cross-Cultural Robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior*, 50, 141-147.

- Del Rey, R., Lazuras, L., Casas, J. A., Barkoukis, V., Ortega-Ruiz, R., & Tsorbatzoudis, H. (2016). Does empathy predict (cyber) bullying perpetration, and how do age, gender and nationality affect this relationship? *Learning and Individual Differences, 45*, 275-281.
- Den Hamer, A. H., & Konijn, E. A. (2016). Can emotion regulation serve as a tool in combating cyberbullying?. *Personality and Individual Differences, 102*, 1-6.
- DeSmet, A., Bastiaensens, S., Van Cleemput, K., Poels, K., Vandebosch, H., Cardon, G., & De Bourdeaudhuij, I. (2016). Deciding whether to look after them, to like it, or leave it: A multidimensional analysis of predictors of positive and negative bystander behavior in cyberbullying among adolescents. *Computers in Human Behavior, 57*, 398-415.
- DeSmet, A., Bastiaensens, S., Van Cleemput, K., Poels, K., Vandebosch, H., & De Bourdeaudhuij, I. (2012). Mobilizing bystanders of cyberbullying: an exploratory study into behavioural determinants of defending the victim. *Annual review of Cybertherapy and Telemedicine, 10*, 58-63.
- DeSmet, A., Veldeman, C., Poels, K., Bastiaensens, S., Van Cleemput, K., Vandebosch, H., & De Bourdeaudhuij, I. (2014). Determinants of self-reported bystander behavior in cyberbullying incidents amongst adolescents. *Cyberpsychology, Behavior, and Social Networking, 17*(4), 207-215.
- Didden, R., Scholte, R. H., Korzilius, H., De Moor, J. M., Vermeulen, A., O'Reilly, M. Lang, R., & Lancioni, G. E. (2009). Cyberbullying among students with intellectual and developmental disability in special education settings. *Developmental Neurorehabilitation, 12*(3), 146-151.
- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*, 61-75.
- Dodge, K. A., Coie, J. D., & Lynam, D. (2007). Aggression and antisocial behavior in youth. In N. Eisenberg (Ed.) *Handbook of Child Psychology, 3.*, (pp. 719-788), Wiley.
- Domonkos K., Ujhelyi A. (2014). Elektronikus zaklatás – egy kutatás tükrében. In Hülber László (szerk.): *Digitális nemzedék konferencia 2014. Konferenciakötet*. ELTE PPK Neveléstudományi Intézet, Budapest. 47.
- Domonkos K., Ujhelyi A. (2015). Az online zaklatás médiareprezentációja. *Neveléstudomány, (2015/1)*, 77-92.
- Dooley, Pyzalski, J., & Cross, D. (2009). Cyberbullying versus face-to-face bullying: A theoretical and conceptual review. *Zeitschrift für Psychologie / Journal of Psychology, 217*, 182-188.
- Dunn, J., & Brown, J. (1991). Relationships, talk about feelings, and the development of affect regulation in early childhood. In J. Garber & K. A. Dodge (Eds.), *Cambridge studies in social and emotional development. The development of emotion regulation and dysregulation* (p. 89-108). Cambridge University Press.

- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432.
- Eberly, M. B., & Montemayor, R. (1998). Doing good deeds: An examination of adolescent prosocial behavior in the context of parent-adolescent relationships. *Journal of Adolescent Research, 13*(4), 403-432.
- Eisenberg, N. (2000). Empathy and sympathy. In M. Lewis & Haviland-Jones (Eds.), *Handbook of emotions* (pp. 677–693). Guilford.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry, 9*(4), 241-273.
- Eisenberg, N., & Fabes, R. A. (1992). Emotion, regulation, and the development of social competence. In M. S. Clark (Ed.), *Review of Personality and Social Psychology: Emotion and Social Behavior* (pp. 119-150). Sage Publications, Inc.
- Eisenberg, N., Miller, P. A., Shell, R., McNalley, S., & Shea, C. (1991). Prosocial development in adolescence: A longitudinal study. *Developmental psychology, 27*(5), 849.
- Eisenberg-Berg, N., & Mussen, P. (1978). Empathy and moral development in adolescence. *Developmental Psychology, 14*(2), 185.
- Eisenberg, N., Spinrad, T. L., & Valiente, C. (2018, October). Emotion-related self-regulation and children's social, psychological, and academic functioning. In *Diversity in harmony—insights from psychology: Proceedings of the 31st International Congress of Psychology* (pp. 268-295). John Wiley & Sons.
- Elekes, Zs. (2015). *Európai iskolavizsgálat az alkohol- és egyéb drogfogyasztási szokásokról – 2015, Magyarországi eredmények*. Budapesti Corvinus Egyetem.
- Elgar, F. J., Napoletano, A., Saul, G., Dirks, M. A., Craig, W., Poteat, V. P., Holt, M., & Koenig, B. W. (2014). Cyberbullying victimization and mental health in adolescents and the moderating role of family dinners. *JAMA Pediatrics, 168*(11), 1015-1022.
- Elipe, P., de la Oliva Muñoz, M., & Del Rey, R. (2018). Homophobic bullying and cyberbullying: Study of a silenced problem. *Journal of Homosexuality, 65*(5), 672-686.
- Elliott, G. R., & Feldman, S. S. (1990). Capturing the adolescent experience. In S.S. Feldman & G.R. Elliot (Eds.), *At the threshold: The developing adolescent* (pp. 1-13). Harvard University Press.
- Elliott, A. C., & Woodward, W. A. (2007). *Statistical analysis quick reference guidebook: With SPSS examples*. Sage.
- Elsaesser, C., Russell, B., Ohannessian, C. M., & Patton, D. (2017). Parenting in a digital age: A review of parents' role in preventing adolescent cyberbullying. *Aggression and Violent Behavior, 35*, 62-72.

- Eraslan-Çapan, B., & Bakioğlu, F. (2020). Submissive behavior and cyber bullying: A study on the mediator roles of cyber victimization and moral disengagement. *Psychologica Belgica*, 60(1), 18.
- Erdur-Baker, O. (2009). Cyber-bullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media & Society*, 12, 109-125.
- Erikson, E. H. (1956). The problem of ego identity. *Journal of the American Psychoanalytic Association*, 4(1), 56-121.
- Espelage, D. L., Rose, C. A., & Polanin, J. R. (2015). Social-emotional learning program to reduce bullying, fighting, and victimization among middle school students with disabilities. *Remedial and Special Education*, 36(5), 299-311.
- Everri, M., Mancini, T., & Fruggeri, L. (2015). Family functioning, parental monitoring and adolescent familiar responsibility in middle and late adolescence. *Journal of Child and Family Studies*, 24(10), 3058-3066.
- Fanti, K. A., Demetriou, A. G., & Hawa, V. V. (2012). A longitudinal study of cyberbullying: Examining risk and protective factors. *European Journal of Developmental Psychology*, 9(2), 168-181.
- Farrington, D. P. (1993). Understanding and preventing bullying. *Crime and Justice*, 17, 381-458.
- Fass, P. (1977). *The damned and the beautiful: American youth in the 1920's*. New York: Oxford University Press.
- Feinberg, T. (2003). Bullying prevention and intervention. *Principal Leadership*, 4(1), 10-14.
- Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., ... & Kainbacher, M. (2011). The bystander-effect: a meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin*, 137(4), 517.
- Flouri, E., & Buchanan, A. (2002). Life satisfaction in teenage boys: The moderating role of father involvement and bullying. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 28(2), 126-133.
- Fridh, M., Lindström, M., & Rosvall, M. (2015). Subjective health complaints in adolescent victims of cyber harassment: moderation through support from parents/friends—a Swedish population-based study. *BMC Public Health*, 15(1), 949.
- Gano-Overway, L. A. (2013). Exploring the connections between caring and social behaviors in physical education. *Research Quarterly for Exercise and Sport*, 84, 104–114.
- Garaigordobil, M. G., Larrain, E. L., Garaigordobil, M., & Larrain, E. (2020). Bullying and cyberbullying in LGBT adolescents: Prevalence and effects on mental health. *Comunicar. Media Education Research Journal*, 28(1).

- Garaigordobil, M. & Machimbarrena, J. M. (2019). Victimization and Perpetration of Bullying/Cyberbullying: Connections with Emotional and Behavioral Problems and Childhood Stress. *Psychosocial Intervention, 28*, 67-73.
- Garandeau, C. F., Laninga-Wijnen, L., & Salmivalli, C. (2021). Effects of the Kiva anti-bullying program on affective and cognitive empathy in children and adolescents. *Journal of Clinical Child & Adolescent Psychology, 1-15*.
- Garnefski, N., & Kraaij, V. (2007). The cognitive emotion regulation questionnaire. *European Journal of Psychological Assessment, 23*(3), 141-149.
- Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences, 30*(8), 1311-1327.
- Georgiou, S. N. (2008). Parental style and child bullying and victimization experiences at school. *Social Psychology of Education, 11*(3), 213-227.
- Gestsdottir, S., & Lerner, R. M. (2008). Positive development in adolescence: The development and role of intentional self-regulation. *Human Development, 51*(3), 202-224.
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International Journal of Endocrinology and Metabolism, 10*(2), 486.
- Gianesini, G., & Brighi, A. (2015). Cyberbullying in the era of digital relationships: The unique role of resilience and emotion regulation on adolescents' adjustment. *Sociological Studies of Children and Youth, 19*, 1-46.
- Giedd, J. N. (2004). Structural magnetic resonance imaging of the adolescent brain. *Annals of the New York Academy of Sciences, 1021*(1), 77-85.
- Giedd, J. N., Blumenthal, J., Jeffries, N. O., Castellanos, F. X., Liu, H., Zijdenbos, A., et al. (1999). Brain development during childhood and adolescence: A longitudinal MRI study. *Nature Neuroscience, 2*, 861– 863.
- Gini, G., Albiero, P., Benelli, B., & Altoe, G. (2008). Determinants of adolescents' active defending and passive bystanding behaviour in bullying. *Journal of Adolescence, 31*, 93-105.
- Gini, G., Pozzoli, T., & Bussey, K. (2015). The role of individual and collective moral disengagement in peer aggression and bystanding: A multilevel analysis. *Journal of Abnormal Child Psychology, 43*(3), 441-452.
- Gini, G., Pozzoli, T., & Hymel, S. (2014). Moral disengagement among children and youth: A meta-analytic review of links to aggressive behavior. *Aggressive Behavior, 40*(1), 56-68.
- Gleason, K. A., Jensen-Campbell, L. A., & Ickes, W. (2009). The role of empathic accuracy in adolescents' peer relations and adjustment. *Personality and Social Psychology Bulletin, 35*(8), 997-1011.
- Goebert, D., Else, I., Matsu, C., Chung-Do, J., & Chang, J. Y. (2011). The impact of cyberbullying on substance use and mental health in a multiethnic sample. *Maternal and Child Health Journal, 15*(8), 1282-1286.

- Gottman, J. M., & Mettetal, G. (1986). Speculations about social and affective development: Friendship and acquaintanceship through adolescence. In J. M. Gottman & J. G. Parker (Eds.), *Studies in emotion and social interaction. Conversations of friends: Speculations on affective development* (p. 192–237). Cambridge University Press.
- Grading, P., Strohmeier, D., & Spiel, C. (2009). Traditional bullying and cyberbullying: Identification of risk groups for adjustment problems. *Zeitschrift für Psychologie/Journal of Psychology*, 217(4), 205.
- Graeff, E. (2014). Tweens, cyberbullying, and moral reasoning: Separating the upstanders from the bystanders. In *Communication and Information Technologies Annual*. Emerald Group Publishing Limited.
- Granic, I., Dishion, T. J., & Hollenstein, T. (2003). The family ecology of adolescence: A dynamic systems perspective on normative development. In G. R. Adams, M. D. Berzonsky (Eds.) *Blackwell handbook of adolescence*, (pp. 269-289.) Blackwell Publishing
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41-54.
- Greene, M. B. (2000). Bullying and harassment in schools.
- Griezel, L., Craven, R. G., Yeung, A. S., & Finger, L. (2009, January). GRI08737 The development of a multidimensional measure of cyber bullying. In *AARE 2008 International Education Research Conference*.
- Griffin, R. S., & Gross, A. M. (2004). Childhood bullying: Current empirical findings and future directions for research. *Aggression and Violent Behavior*, 9(4), 379-400.
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology*, 25(6), 633-649.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348-362.
- Guo, S. (2016) A Meta-Analysis of the Predictors of Cyberbullying Perpetration and Victimization. *Psychology in the Schools*, 53, 432-453.
- Hardy, S. A., Bean, D. S., & Olsen, J. A. (2015). Moral identity and adolescent prosocial and antisocial behaviors: Interactions with moral disengagement and self-regulation. *Journal of Youth and Adolescence*, 44(8), 1542-1554.
- Harter, S., & Whitesell, N. R (1996). Multiple pathways to self-reported depression and psychological adjustment among adolescents. *Development and Psychopathology*, 8, 761–777.
- Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin*, 121(3), 355-370.
- Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long term effects of the Seattle Social Development intervention on school bonding trajectories. *Applied*

Developmental Science: Special issue: Prevention as altering the course of development, 5, 225-236.

Heerde, J. A., & Hemphill, S. A. (2018). Examination of associations between informal help-seeking behavior, social support, and adolescent psychosocial outcomes: A meta-analysis. *Developmental Review*, 47, 44-62.

Heiman, T., Olenik-Shemesh, D., & Eden, S. (2015). Cyberbullying involvement among students with ADHD: Relation to loneliness, self-efficacy and social support. *European Journal of Special Needs Education*, 30(1), 15-29.

Hellfeldt, K., López-Romero, L., & Andershed, H. (2020). Cyberbullying and psychological well-being in young adolescence: the potential protective mediation effects of social support from family, friends, and teachers. *International Journal of Environmental Research and Public Health*, 17(1), 45.

Hemphill, S. A., & Heerde, J. A. (2014). Adolescent predictors of young adult cyberbullying perpetration and victimization among Australian youth. *Journal of Adolescent Health*, 55(4), 580-587.

Henry, C. S., Sager, D. W., & Plunkett, S. W. (1996). Adolescents' perceptions of family system characteristics, parent-adolescent dyadic behaviors, adolescent qualities, and adolescent empathy. *Family Relations*, 283-292.

Hinduja, S., & Patchin, J. W. (2007). Offline consequences of online victimization: School violence and delinquency. *Journal of School Violence*, 6(3), 89-112.

Hinduja, S., & Patchin, J. W., (2008). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior*, 29, 129-156.

Hinduja, S. Ph.D., & Patchin, J.W. Ph.D (2010). Cyberbullying Identification, Prevention and Response. Cyberbullying Research Center Website. <http://www.cyberbullying.us>

Hirsch, B. J. (1981). Social networks and the coping process: Creating personal communities. In B. Gottlieb (Ed.) *Social Networks and Social Support* (pp.149-170): Sage Publications.

Holfeld, B. (2014). Perceptions and attributions of bystanders to cyber bullying. *Computers in Human Behavior*, 38, 1-7.

Holfeld, B., & Grabe, M. (2012). An examination of the history, prevalence, characteristics, and reporting of cyberbullying in the United States. In Q. Li, D. Cross, & P. K. Smith (Eds.) *Cyberbullying in the Global Playground: Research from International Perspectives* (pp. 117-142) Blackwell Publishing Ltd.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.

Huang, Y. Y., & Chou, C. (2010). An analysis of multiple factors of cyberbullying among junior high school students in Taiwan. *Computers in Human Behavior*, 26(6), 1581-1590.

- Hurrelmann, K., & Richter, M. (2006). Risk behaviour in adolescence: the relationship between developmental and health problems. *Journal of Public Health, 14*(1), 20-28.
- Hutchinson, M. (2012). Exploring the impact of bullying on young bystanders. *Educational Psychology in Practice, 28*(4), 425-442.
- İçelliöğlü, S., & Özden, M. S. (2014). Cyberbullying: A new kind of peer bullying through online technology and its relationship with aggression and social anxiety. *Procedia-Social and Behavioral Sciences, 116*, 4241-4245.
- Jármí, É. (2019). Az iskolai bántalmazás (bullying) megelőzése. *Educatio, 28*(3), 528-540.
- Jenkins, L. N., & Demaray, M. K. (2012). Social support and self-concept in relation to peer victimization and peer aggression. *Journal of School Violence, 11*(1), 56-74.
- Juvonen, J., & Gross, E. F. (2008). Extending the school grounds?—Bullying experiences in cyberspace. *Journal of School Health, 78*(9), 496-505.
- Kaufman, E. A., Xia, M., Fosco, G., Yaptangco, M., Skidmore, C. R., & Crowell, S. E. (2016). The Difficulties in Emotion Regulation Scale Short Form (DERS-SF): Validation and replication in adolescent and adult samples. *Journal of Psychopathology and Behavioral Assessment, 38*(3), 443-455.
- Kenny, U., Sullivan, L., Callaghan, M., Molcho, M., & Kelly, C. (2018). The relationship between cyberbullying and friendship dynamics on adolescent body dissatisfaction: A cross-sectional study. *Journal of Health Psychology, 23*(4), 629-639.
- Kochenderfer, B. J., & Ladd, G. W. (1996). Peer victimization: Cause or consequence of school maladjustment?. *Child Development, 67*(4), 1305-1317.
- Kohlberg, L. (1984). *Essays on moral development: Vol. 2: The psychology of moral development*. Harper & Row.
- Kohlberg, L., & Gilligan, C. (1971). The adolescent as philosopher: The discovery of self in a postconventional world. *Daedalus, 110*, 1051–1086.
- Kokkinos, C. M., Antoniadou, N., Markos, A. (2014). Cyber-bullying: An investigation of the psychological profile of university student participants. *Journal of Applied Developmental Psychology, 35*, 204-214.
- Kököneyi, Gy. (2008). *Érzelemszabályozás krónikus fájdalomban* (Unpublished doctoral dissertation). Eötvös Loránd University.
- Koutra, K., Triliva, S., Roumeliotaki, T., Lionis, C., & Vgontzas, A. N. (2013). Cross-cultural adaptation and validation of the Greek version of the Family Adaptability and Cohesion Evaluation Scales IV Package (FACES IV Package). *Journal of Family Issues, 34*(12), 1647-1672.
- Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin, 140*(4), 1073-1137.

- Kowalski, R. M., Morgan, C. A., & Limber, S. P. (2012). Traditional bullying as a potential warning sign of cyberbullying. *School Psychology International*, *33*(5), 505-519.
- Kowalski, R. M., & Limber, S. P. (2007). Electronic bullying among middle school students. *Journal of Adolescent Health*, *41*(6), S22-S30.
- Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health*, *53*(1), S13-S20.
- Kowalski, R. M., Limber, S. P., & McCord, A. (2019). A developmental approach to cyberbullying: Prevalence and protective factors. *Aggression and Violent Behavior*, *45*, 20-32.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being?. *American Psychologist*, *53*(9), 1017.
- Kulcsár, Zs. (1998). *Egészségpszichológia*. ELTE Eötvös Kiadó
- Kwan, G. C. E., Skoric, M. M. (2013). Facebook bullying: An extension of battles in school. *Computers in Human Behavior*, *29*, 16-25.
- Laible, D. (2007). Attachment with parents and peers in late adolescence: Links with emotional competence and social behavior. *Personality and Individual Differences*, *43*(5), 1185–1197.
- Lang, J. (2018). The efficacy of emotional intelligence training for the emotion regulation of bullying students: A randomized controlled trial. *NeuroQuantology*, *16*(2), 83-88.
- Laninga-Wijnen, L., Harakeh, Z., Dijkstra, J. K., Veenstra, R., & Vollebergh, W. (2018). Aggressive and prosocial peer norms: Change, stability, and associations with adolescent aggressive and prosocial behavior development. *The Journal of Early Adolescence*, *38*(2), 178-203.
- Larrañaga, E., Yubero, S., Ovejero, A., & Navarro, R. (2016). Loneliness, parent-child communication and cyberbullying victimization among Spanish youths. *Computers in Human Behavior*, *65*, 1-8.
- Larson, R., Csikzentmihalyi, M., & Graef, R. (1980). Mood variability and the psychosocial adjustment of adolescents. *Journal of Youth and Adolescents*, *9*, 469–490.
- Larson, R., & Lampman-Petratis, C. (1989). Daily emotional states as reported by children and adolescents. *Child Development*, *60*, 1250–1260.
- Latané, B., & Darley, J. M. (1968). Group inhibition of bystander intervention in emergencies. *Journal of Personality and Social Psychology*, *10*, 215–221.
- Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* AppletonCentury-Crofts.
- Laursen, B., Coy, K. C., & Collins, W. A. (1998). Reconsidering changes in parent-child conflict across adolescence: A meta-analysis. *Child Development*, *69*, 817–832.

- Lee, C-H. (2011). An ecological systems approach to bullying behaviors among middle school students in the United States. *Journal of Interpersonal Violence*, 26(8), 1664-1693.
- Lereya, S. T., Samara, M., & Wolke, D. (2013). Parenting behavior and the risk of becoming a victim and a bully/victim: A meta-analysis study. *Child Abuse & Neglect*, 37(12), 1091-1108.
- Levasseur, C., Desbiens, N., & Bowen, F. (2017). Moral reasoning about school bullying in involved adolescents. *Journal of Moral Education*, 46(2), 158-176.
- Lewis, M. (1997). *Altering fate: Why the past does not predict the future*. New York: Guilford.
- Li, Q., (2006). Cyberbullying in schools: A research of gender differences. *School Psychology International*, 27, 157-170.
- Li, Q. (2007). Bullying in the new playground: Research into cyberbullying and cyber victimisation. *Australasian Journal of Educational Technology*, 23(4).
- Lianos, H., & McGrath, A. (2018). Can the general theory of crime and general strain theory explain cyberbullying perpetration?. *Crime & Delinquency*, 64(5), 674-700.
- Livingstone, S. & Byrne, J. (2018). Parenting in the digital age. The challenges of parental responsibility in comparative perspective. In G. Mascheroni, C. Ponte, & A. Jorge (Eds.) *Digital Parenting. The Challenges for Families in the Digital Age*. The International Clearinghouse on Children, Youth & Media.
- Livingstone, S., Haddon, L., Görzig, A., Ólafsson, K. (2011). Risks and safety on the internet. The perspective of European children. Full Findings. LSE.
- Livingstone, S., Mascheroni, G., Ólafsson, K., Haddon, L. (2014). Children's online risks and opportunities: Comparative findings from EU Kids Online and Net Children Go Mobile. London: London School of Economics and Political Science
- Livingstone, S., Ólafsson, K., Helsper, E. J., Lupiáñez-Villanueva, F., Veltri, G. A., & Folkvord, F. (2017). Maximizing opportunities and minimizing risks for children online: The role of digital skills in emerging strategies of parental mediation. *Journal of Communication*, 67(1), 82-105.
- López, E. E., Pérez, S. M., Ochoa, G. M., & Ruiz, D. M. (2008). Adolescent aggression: Effects of gender and family and school environments. *Journal of Adolescence*, 31(4), 433-450.
- Lovett, B. J., & Sheffield, R. A. (2007). Affective empathy deficits in aggressive children and adolescents: A critical review. *Clinical psychology review*, 27(1), 1-13.
- Machackova, H., Dedkova, L., & Mezulanikova, K. (2015). Brief report: The bystander effect in cyberbullying incidents. *Journal of Adolescence*, 43, 96-99.
- Macháčková, H., Dedkova, L., Sevcikova, A., & Cerna, A. (2013). Bystanders' support of cyberbullied schoolmates. *Journal of Community & Applied Social Psychology*, 23(1), 25-36.
- Machackova, H., & Pfetsch, J. (2016). Bystanders' responses to offline bullying and cyberbullying: The role of empathy and normative beliefs about aggression. *Scandinavian Journal of Psychology*, 57(2), 169-176.

- Machimbarrena, J. M., Calvete, E., Fernández-González, L., Álvarez-Bardón, A., Álvarez-Fernández, L., & González-Cabrera, J. (2018). Internet risks: An overview of victimization in cyberbullying, cyber dating abuse, sexting, online grooming and problematic internet use. *International Journal of Environmental Research and Public Health*, *15*(11), 2471.
- Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. *Journal of Youth and Adolescence*, *14*(4), 267-283.
- Marcia, J. E. (1980). Identity in adolescence. J. Adelson (Ed.) *Handbook of adolescent psychology* (pp. 159-187.), Wiley
- Marciano, L., Schulz, P. J., & Camerini, A. L. (2020). Cyberbullying perpetration and victimization in youth: A meta-analysis of longitudinal studies. *Journal of Computer-Mediated Communication*, *25*(2), 163-181.
- Marín-López, I., Zych, I., Ortega-Ruiz, R., Monks, C. P., & Llorent, V. J. (2020). Empathy online and moral disengagement through technology as longitudinal predictors of cyberbullying victimization and perpetration. *Children and Youth Services Review*, *116*, 105144.
- Martins, M. D., Simao, A. M. V., Freire, I., Caetano, A. P., & Matos A. (2016). Cybervictimization and cyber-aggression among Portuguese adolescents: The relation to family support and family rules. *International Journal of Cyber Behavior, Psychology and Learning*, *6*(3), 65-78.
- Mazzone, A. (2020). Bystanders to bullying: an introduction to the special issue. *International Journal of Bullying Prevention*, *2*, 1-5.
- McCubbin, H. I., Joy, C. B., Cauble, A. E., Comeau, J. K., Patterson, J. M., & Needle, R. H. (1980) Family stress and coping decade review. *Journal of Marriage and the Family*, *42*, 855-871.
- McDonald, K., Malti, T., Killen, M., & Rubin, K. (2014). Best friends' discussion of social dilemmas. *Journal of Youth and Adolescence*, *43*, 233–244.
- Menesini, E., & Nocentini, A. (2009). Cyberbullying definition and measurement: Some critical considerations. *Zeitschrift für Psychologie/Journal of Psychology*, *217*(4), 230-232.
- Mesch, G. S. (2009). Parental mediation, online activities, and cyberbullying. *CyberPsychology & Behavior*, *12*(4), 387-393.
- Miklósi M., Martos T., Kocsis-Bogár K., & Perczel Forintos D. (2011). A Kognitív Érzelem-Reguláció Kérdőív magyar változatának pszichometriai jellemzői. *Psychiatria Hungarica*, *26*(2), 102-111.
- Mishna, F., Khoury-Kassabri, M., Gadalla, T., & Daciuk, J. (2012). Risk factors for involvement in cyber bullying: Victims, bullies and bully–victims. *Children and Youth Services Review*, *34*(1), 63-70.
- Mitsopoulou, E., & Giovazolias, T. (2015). Personality traits, empathy and bullying behavior: A meta-analytic approach. *Aggression and Violent Behavior*, *21*, 61-72.

- Molcho, M., Craig, W., Due, P., Pickett, W., Harel-Fisch, Y., & Overpeck, M. (2009). Cross-national time trends in bullying behaviour 1994–2006: findings from Europe and North America. *International Journal of Public Health, 54*(2), 225-234.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*(2), 361-388.
- Moxey, N., & Bussey, K. (2020). Styles of bystander intervention in cyberbullying incidents. *International Journal of Bullying Prevention, 2*(1), 6-15.
- Davidshofer, K. R., & Murphy, C. O. (2005). *Psychological testing: principles and applications*. Pearson/Prentice.
- Navarro, R., Yubero, S., Larrañaga, E., & Martínez, V. (2012). Children's cyberbullying victimization: Associations with social anxiety and social competence in a Spanish sample. *Child indicators research, 5*(2), 281-295.
- Neinstein, L. S., Gordon, C. M., Katzman, D. K., & Rosen, D. S. (2009). *Handbook of Adolescent Health Care*. Lippincott.
- Németh Á. & Költő A. (2016). *Egészség és egészségmagatartás iskoláskorban 2014*. Nemzeti Egészségfejlesztési Intézet.
- Neufeld, G., & Gabor Maté, (2006). *Hold On to Your Kids: Why Parents need to Matter More Than Peers*. Ballantine Books: The Random House Publishing Group.
- Neumann, A., van Lier, P. A., Gratz, K. L., & Koot, H. M. (2010). Multidimensional assessment of emotion regulation difficulties in adolescents using the difficulties in emotion regulation scale. *Assessment, 17*(1), 138-149.
- Nickerson, A. B., Fredrick, S. S., Allen, K. P., & Jenkins, L. N. (2019). Social emotional learning (SEL) practices in schools: Effects on perceptions of bullying victimization. *Journal of School Psychology, 73*, 74-88.
- Nickerson, A. B., Mele, D., & Princiotta, D. (2008). Attachment and empathy as predictors of roles as defenders or outsiders in bullying interactions. *Journal of School Psychology, 46*, 687-703.
- Nocentini, A., Calmaestra, J., Schultze-Krumbholz, A., Scheithauer, H., Ortega, R., & Menesini, E. (2010). Cyberbullying: Labels, behaviours and definition in three European countries. *Australian Journal of Guidance and Counselling, 20*(2), 129.
- Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression in adolescence. *Psychological Bulletin, 115*, 424–443.
- Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior, 30*, 69-78.
- Ok, S., & Aslan, S. (2010). The school bullying and perceived parental style in adolescents. *Procedia-Social and Behavioral Sciences, 5*, 536-540.

- Oláh A. (1987). *A harag és düh kifejezési mód skála tesztkönyve*. Munkaügyi Kutatóintézet, Budapest.
- Olenik-Shemesh, D., & Heiman, T. (2017). Cyberbullying victimization in adolescents as related to body esteem, social support, and social self-efficacy. *The Journal of Genetic Psychology, 178*(1), 28-43.
- Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy, 22*(2), 144-167.
- Olson, D. (2011). FACES IV and the circumplex model: Validation study. *Journal of Marital and Family Therapy, 37*(1), 64-80.
- Olweus, D. (1994a). Bullying at school: Basic facts and effects of a school based intervention program. *Journal of Child Psychology and Psychiatry, 35*(7), 1171-1190.
- Olweus, D. (1994b). Bullying at School: Long-Term Outcomes for the Victims and an Effective School-Based Intervention Program. In Huesmann, L. R. (Ed.) *Aggressive Behavior: Current Perspectives*. (97-130), Plenum Press.
- Olson, D. H., Sprenkle, D. H., & Russell, C. S. (1979). Circumplex model of marital and family systems: I. Cohesion and adaptability dimensions, family types, and clinical applications. *Family process, 18*(1), 3-28.
- Ortega-Barón, J., Buelga-Vasquez, S., & Cava-Caballero, M. J. (2016). The Influence of School Climate and Family Climate among Adolescents Victims of Cyberbullying. *Comunicar, 24*(46), 57-65.
- Ortega, R., Elipe, O., Mora-Merchan, J. A., Calmaestra, J., Vega, E. (2009). The emotional impact on victims of traditional bullying and cyberbullying: A study of Spanish adolescents. *Zeitschrift für Psychologie/Journal of Psychology, 217*, 197-204.
- Ortega, R., Elipe, P., Mora-Merchán, J. A., Genta, M. L., Brighi, A., Guarini, A., Smith, P. K., Thompson, F., & Tippett, N. (2012). The emotional impact of bullying and cyberbullying on victims: A European cross-national study. *Aggressive Behavior, 38*(5), 342-356.
- Overgaauw, S., Rieffe, C., Broekhof, E., Crone, E. A., & Güroğlu, B. (2017). Assessing empathy across childhood and adolescence: Validation of the Empathy Questionnaire for Children and Adolescents (EmQue-CA). *Frontiers in psychology, 8*, 870.
- Pabian, S., Vandebosch, H., Poels, K., Van Cleemput, K., & Bastiaensens, S. (2016). Exposure to cyberbullying as a bystander: An investigation of desensitization effects among early adolescents. *Computers in Human Behavior, 62*, 480-487.
- Paciello, M., Fida, R., Cerniglia, L., Tramontano, C., & Cole, E. (2013). High cost helping scenario: The role of empathy, prosocial reasoning and moral disengagement on helping behavior. *Personality and Individual Differences, 55*(1), 3-7.
- Padilla-Walker, L. M., Nielson, M. G., & Day, R. D. (2016). The role of parental warmth and hostility on adolescents' prosocial behavior toward multiple targets. *Journal of Family Psychology, 30*(3), 331.

- Palmer, E. J. (2005). The relationship between moral reasoning and aggression, and the implications for practice. *Psychology, Crime & Law*, 11(4), 353-361.
- Papp, Z. I., Zipernovszky O., Kékesi M. Z., & Jámbori Sz. (2017). A Multidimenzionális Észlelt Társas Támogatás Kérdőív magyar nyelvű validálása. *Mentálhigiéné és Pszichoszomatika*, 18, 230-262.
- Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice*, 4, 148-169.
- Patchin, J. W. & Hinduja, S. (2010). Cyberbullying and Self-Esteem. *Journal of School Health*, 80, 614-621.
- Patterson, L. J., Allan, A., & Cross, D. (2016). Adolescent bystanders' perspectives of aggression in the online versus school environments. *Journal of Adolescence*, 49, 60-67.
- Pérez-Fuentes, M. D. C., Molero Jurado, M. D. M., Barragán Martín, A. B., & Gázquez Linares, J. J. (2019). Family functioning, emotional intelligence, and values: Analysis of the relationship with aggressive behavior in adolescents. *International Journal of Environmental Research and Public Health*, 16(3), 478-492.
- Perez, J., Venta, A., Garnaat, S., & Sharp, C. (2012). The Difficulties in Emotion Regulation Scale: Factor structure and association with nonsuicidal self-injury in adolescent inpatients. *Journal of Psychopathology and Behavioral Assessment*, 34(3), 393-404.
- Perren, S., Corcoran, L., Cowie, H., Dehue, F., Garcia D., McGuckin, C., Sevcikova, A., Tsatsou, P., & Völlink, T. (2012). Tackling cyberbullying: Review of empirical evidence regarding successful responses by students, parents, and schools. *International Journal of Conflict and Violence*, 6(2), 283-292.
- Perren, S., Dooley, J., Shaw, T., & Cross, D. (2010). Bullying in school and cyberspace: Associations with depressive symptoms in Swiss and Australian adolescents. *Child and Adolescent Psychiatry and Mental Health*, 4(1), 28.
- Perren, S., & Gutzwiller-Helfenfinger, E. (2012). Cyberbullying and traditional bullying in adolescence: Differential roles of moral disengagement, moral emotions, and moral values. *European Journal of Developmental Psychology*, 9, 195-209.
- Peterson, J., & Densley, J. (2017). Cyber violence: What do we know and where do we go from here?. *Aggression and Violent Behavior*, 34, 193-200.
- Pettalia J. L., Levin, E., & Dickinson, J. (2013). Cyberbullying: Eliciting harm without consequence. *Computers in Human Behavior*, 29, 2758-2765.
- Piaget, J. (1964). Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching*, 2, 176-186.
- Place, M., Hulsmeier, J., Brownrigg, A., & Soulsby, A. (2005). The Family Adaptability and Cohesion Evaluation Scale (FACES): an instrument worthy of rehabilitation?. *Psychiatric Bulletin*, 29(6), 215-218.

- Portes, P. R., Sandhu, D. S., & Longwell-Grice, R. (2002). Understanding adolescent suicide: A psychosocial interpretation of developmental and contextual factors. *ADOLESCENCE-SAN DIEGO*, 37, 805-814.
- Price, D., Green, D., Spears, B., Scrimgeour, M., Barnes, A., Geer, R., & Johnson, B. (2014). A qualitative exploration of cyber-bystanders and moral engagement. *Journal of Psychologists and Counsellors in Schools*, 24(1), 1-17.
- Quoidbach, J., Berry, E. V., Hansenne, M., & Mikolajczak, M. (2010). Positive emotion regulation and well-being: Comparing the impact of eight savoring and dampening strategies. *Personality and Individual Differences*, 49(5), 368-373.
- Renati, R., Berrone, C., & Zanetti, M. A. (2012). Morally disengaged and unempathic: Do cyberbullies fit these definitions? An exploratory study. *Cyberpsychology, Behavior, and Social Networking*, 15(8), 391-398.
- Rigby, K. (2003). Consequences of bullying in schools. *The Canadian Journal of Psychiatry*, 48(9), 583-590.
- Rigby, K., & Slee, P. T. (1993). Dimensions of interpersonal relation among Australian children and implications for psychological well-being. *The Journal of Social Psychology*, 133(1), 33-42.
- Rigby, K., & Slee, P. (1999). Suicidal ideation among adolescent school children, involvement in bully—victim problems, and perceived social support. *Suicide and Life-Threatening Behavior*, 29(2), 119-130.
- Rigby, K., & Smith, P. K. (2011). Is school bullying really on the rise?. *Social Psychology of Education*, 14(4), 441-455.
- Rivers, I., & Noret, N. (2010). 'I h8 u': Findings from a five-year study of text and e-mail bullying. *British Educational Research Journal*, 36, 643-671.
- Rivers, I., & Smith, P. K. (1994). Types of bullying behaviour and their correlates. *Aggressive Behavior*, 20(5), 359-368.
- Robertson, T., Daffern, M., & Bucks, R. S. (2012). Emotion regulation and aggression. *Aggression and Violent Behavior*, 17(1), 72-82.
- Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness and prosocial behavior. *Child Development*, 67, 449-470.
- Robson, C., & Witenberg, R. T. (2013). The influence of moral disengagement, morally based self-esteem, age, and gender on traditional bullying and cyberbullying. *Journal of School Violence*, 12(2), 211-231.
- Rosenblum, G. D., & Lewis, M. (2003). Emotional development in adolescence. In G. R. Adams, M. D. Berzonsky (Eds.) *Blackwell handbook of adolescence*, (pp. 269-289.) Blackwell Publishing

- Rózsa S., Gáboros J., & Kő N. (1999). A Gyermekviselkedési Kérdőív diagnosztikai megbízhatósága és a több információforráson alapuló jellemzések sajátosságai. *Psychiatria Hungarica*, 4, 375-392.
- Rutherford, H. J., Wallace, N. S., Laurent, H. K., & Mayes, L. C. (2015). Emotion regulation in parenthood. *Developmental Review*, 36, 1-14.
- Şahin, M. (2012a). The relationship between the cyberbullying/cybervictimization and loneliness among adolescents. *Children and Youth Services Review*, 34(4), 834-837.
- Şahin, M. (2012b). An investigation into the efficiency of empathy training program on preventing bullying in primary schools. *Children and Youth Services Review*, 34(7), 1325-1330.
- Salmivalli, C. (1999). Participant role approach to school bullying: Implications for interventions. *Journal of Adolescence*, 22(4), 453-459.
- Salmivalli, C., Kärnä, A., & Poskiparta, E. (2011). Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied. *International Journal of Behavioral Development*, 35(5), 405-411.
- Sarıtaş-Atalar, D., Gençöz, T., & Özen, A. (2015). Confirmatory factor analyses of the difficulties in emotion regulation scale (DERS) in a Turkish adolescent sample. *European Journal of Psychological Assessment*, 31, 12-19.
- Schenk, A. M., & Fremouw, W. J. (2012). Prevalence, psychological impact, and coping of cyberbully victims among college students. *Journal of school violence*, 11(1), 21-37.
- Schneider, S. K., O'Donnell, L., Stueve, A., & Coulter, R. W. (2012). Cyberbullying, school bullying, and psychological distress: A regional census of high school students. *American Journal of Public Health*, 102(1), 171-177.
- Schulenberg, J. E., & Maggs, J. L. (2002). A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. *Journal of Studies on Alcohol, Supplement*, (14), 54-70.
- Shultz, E., Heilman, R., & Hart, K. J. (2014). Cyber-bullying: An exploration of bystander behavior and motivation. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 8(4).
- Schultze-Krumbholz, A., Scheithauer, H. (2009). Social-behavioral correlates of cyberbullying in German student sample. *Zeitschrift für Psychologie/Journal of Psychology*, 217, 224-226.
- Schultze-Krumbholz, A., & Scheithauer, H. (2013). Is cyberbullying related to lack of empathy and social-emotional problems?. *International Journal of Developmental Science*, 7(3-4), 161-166.
- Schultze-Krumbholz, A., Zagorscak, P., Hess, M., & Scheithauer, H. (2020). The influence of school climate and empathy on cyberbystanders' intention to assist or defend in cyberbullying. *International Journal of Bullying Prevention*, 2(1), 16-28.

Shahar, G., & Henrich, C. C. (2016). Perceived family social support buffers against the effects of exposure to rocket attacks on adolescent depression, aggression, and severe violence. *Journal of Family Psychology, 30*(1), 163-168.

Shariff, S., & Gouin, R. (2005, September). Cyber-dilemmas: Gendered hierarchies, free expression and cyber-safety in schools. In *Safety and Security in a Networked World: Balancing Cyber-Rights and Responsibilities*, Oxford Internet Institute conference, Oxford, UK.

Sharp, S. (1995). How much does bullying hurt? The effects of bullying on the personal wellbeing and educational progress of secondary aged students. *Educational and Child Psychology, 12*(2), 81-88.

Siderman, M. L. (2013). Pathways to Cyber Bullying from Bystander to Participant: Secondary School Students' Perspectives. Dissertation. Western Michigan University <http://scholarworks.wmich.edu/dissertations>

Simmons, R. G., & Blyth, D. A. (1987). Moving into adolescence: The impact of pubertal change and school context. New Brunswick.

Simon, D., Zerinváry, B., & Velkey, G. (2015). *Zárótanulmány a TÁMOP-3.1. 1-11/1-2012-0001 „Iskolai agresszió, online és hagyományos zaklatás vizsgálata az iskolai közérzet alakulásával és az alkalmazott pedagógiai és konfliktuskezelési eszközökkel.*

Skilbred-Fjeld, S., Reme, S. E., & Mossige, S. (2020). Cyberbullying involvement and mental health problems among late adolescents. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 14*(1).

Slee, P. T. (1995). Peer victimization and its relationship to depression among Australian primary school students. *Personality and Individual Differences, 18*(1), 57-62.

Slee, P. T., & Rigby, K. (1993). The relationship of Eysenck's personality factors and self-esteem to bully-victim behaviour in Australian schoolboys. *Personality and Individual Differences, 14*(2), 371-373.

Slonje, R. & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 45*(2), 147-154.

Slonje, R., Smith, P. K., & Frisé, A. (2013). The nature of cyberbullying, and strategies for prevention. *Computers in Human Behavior, 29*, 26-32.

Smetana, J. G., & Turiel, E. (2003). Moral development during adolescence. In G. R. Adams, M. D. Berzonsky (Eds.) *Blackwell Handbook of Adolescence*, (pp. 247-267.) Blackwell Publishing

Smith, P. K. (2012). Cyberbullying and cyber aggression. In S. R. Jimerson, A. B. Nickerson, M. J. Mayer, & M. J. Furlong (Eds.), *Handbook of School Violence and School Safety: International Research and Practice* (pp. 93-103). Routledge.

Smith, P. K. (2016). Bullying: Definition, types, causes, consequences and intervention. *Social and Personality Psychology Compass, 10*(9), 519-532.

- Smith, P. K., Cowie, H., Olafsson, R. F., & Liefhoghe, A. P. D. (2002). Definitions of bullying: A comparison of terms used, and age and gender differences, in a fourteen-country international comparison. *Child Development, 73*, 1119-1133.
- Smith, P. K., López-Castro, L., Robinson, S., & Görzig, A. (2019). Consistency of gender differences in bullying in cross-cultural surveys. *Aggression and Violent Behavior, 45*, 33-40.
- Smith, B. H., & Low, S. (2013). The role of social-emotional learning in bullying prevention efforts. *Theory Into Practice, 52*(4), 280-287.
- Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russel, S., Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376-385.
- Smith, P. K., Mahdavi, J., Carvalho, M., & Tippett, N. (2006). An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying.
- Smith, P. K., Salmivalli, C., & Cowie, H. (2012). Effectiveness of school-based programs to reduce bullying: A commentary. *Journal of Experimental Criminology, 8*(4), 433-441.
- Smith, J. D., Schneider, B. H., Smith, P. K., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review, 33*(4), 547-560.
- Solberg, M. E., & Olweus, D. (2003). Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression, 29*(3), 239-268.
- Solecki, S., McLaughlin, K., & Goldschmidt, K. (2014). Promoting positive offline relationships to reduce negative online experiences. *Journal of Pediatric Nursing, 29*(5), 482-484.
- Song, J., & Oh, I. (2018). Factors influencing bystanders' behavioral reactions in cyberbullying situations. *Computers in Human Behavior, 78*, 273-282.
- Spears, B., Slee, P., Owens, L., & Johnson, B. (2009). Behind the scenes and screens: Insights into the human dimension of covert and cyberbullying. *Zeitschrift für Psychologie/Journal of Psychology, 217*(4), 189.
- Spielberger, C. D. Johnson, E. H., Russel, S. F., Crane R. J., Jacobs, G. A., & Worden, T. J. (1985). The experience and expression of anger: Construction and validation of an anger expression scale. In M. A. Chesney & R. H. Rosenman (Eds.) *Anger and Hostility in Cardiovascular and Behavioral Disorders* (pp. 5-30.). McGraw-Hill Publishing Corp.
- Sroufe, L. A., Schrok, E., Motti R., Lawroski, N., C LaFreniere, P. (1984). The role of affect in social competence. In: C. E. Izard, J. Kagan, R. B. Zajonc (Eds.) *Emotions, Cognition, and Behavior*. (pp. 289-319). Cambridge University Press
- Stanbury, S., Bruce, M. A., Jain, S., & Stellern, J. (2009). The Effects of an Empathy Building Program on Bullying Behavior. *Journal of School Counseling, 7*(2), 1-27.

- Steffgen, G., König, A., Pfetsch, J., & Melzer, A. (2009). The role of empathy for adolescents' cyberbullying behaviour. *Kwartalnik Pedagogiczny/Pedagogical Quarterly*, 214(4), 183-198.
- Steffgen, G., König, A., Pfetsch, J., Melzer, A. (2011). Are cyberbullies less empathic? Adolescents' cyberbullying behavior and empathic responsiveness. *Cyberpsychology, Behavior, and Social Networking*, 14, 643-648.
- Steinberg, L. (2000). The family at adolescence: Transition and transformation. *Journal of Adolescent Health*, 27(3), 170-178.
- Steinberg, L. (2002). *Adolescence* (6th ed.). McGraw Hill.
- Steinberg, L. (2014). *Age of opportunity: Lessons from the new science of adolescence*. Houghton Mifflin Harcourt.
- Steinberg, L., & Silk, J. S. (2002). Parenting adolescents. In M. H. Bornstein (Ed.), *Handbook of Parenting*, 1, (pp. 103-133.) Mahwah, NJ: Lawrence Erlbaum Associates.
- Stöber, J. (2001). The Social Desirability Scale-17 (SDS-17): Convergent validity, discriminant validity, and relationship with age. *European Journal of Psychological Assessment*, 17(3), 222.
- Subrahmanyam, K., & Greenfield, P. M. (2008). Communicating online: Adolescent relationships and the media. *The Future of Children*, 18(1), 1-27.
- Sutton, J., Smith, P. K., & Swettenham, J. (1999). Social cognition and bullying: Social inadequacy or skilled manipulation?. *British journal of developmental psychology*, 17(3), 435-450.
- Swearer, S. M., & Doll, B. (2001). Bullying in schools: An ecological framework. *Journal of Emotional Abuse*, 2(2-3), 7-23.
- Taiariol, J. (2010). Cyberbullying: The role of family and school. *Wayne State University Dissertations*. Paper 118.
- Táler O., & Rimóczi T. (n.d.) *Csak egy vicc? Szexualizált cyberbullying a 9-12 évesek között*. https://kek-vonal.hu/wp-content/uploads/2019/10/Oravazlatok_Csak-egy-vicc.pdf
- Tangney, J. P., Stuewig, J., & Mashek, D. J. (2007). Moral emotions and moral behavior. *Annual Review of Psychology*, 58, 345-372.
- Teasley, M. (2014). Cyberbullying, youth behaviour and society. *Journal of Adolescent Behaviour*, 1(2). doi:10.4172/jcalb.1000119
- Thornberg, R., & Jungert, T. (2013). Bystander behavior in bullying situations: Basic moral sensitivity, moral disengagement and defender self-efficacy. *Journal of Adolescence*, 36(3), 475-483.
- Tsaousis, I. (2016). The relationship of self-esteem to bullying perpetration and peer victimization among schoolchildren and adolescents: A meta-analytic review. *Aggression and Violent Behavior*, 31, 186-199.

- Thompson, F., & Smith, P. K. (2011). The use and effectiveness of anti-bullying strategies in schools. *Research Brief DFE-RR098*, 1-220.
- Thornburg, H. D., & Jones, R. M. (1982). Social characteristics of early adolescents: Age versus grade. *The Journal of Early Adolescence*, 2(3), 229-239.
- Tokunaga, R. S. (2010). Following You Home From School: A Critical Review and Synthesis of Research on Cyberbullying Victimization. *Computers in Human Behavior*, 26, 277-287.
- Tsitsika, A., Janikian, M., Wójcik, S., Makaruk, K., Tzavela, E., Tzavara, C., Greydanus, D., Merrick, J., Richardson, C. (2015). Cyberbullying victimization prevalence and associations with internalizing and externalizing problems among adolescents in six European countries. *Computers in Human Behavior*, 51, 1-7.
- Ttofi, M. M., & Farrington, D. P. (2012). Bullying prevention programs: The importance of peer intervention, disciplinary methods and age variations. *Journal of Experimental Criminology*, 8(4), 443-462.
- Twemlow, S., & Fonagy, P. (2005). A developmental approach to mentalizing communities: II. The Peaceful Schools experiment. *Bulletin of the Menninger Clinic*, 69(4), 282-304.
- Twemlow, S., W., Sacco, F. (2012). Miért nem működnek az iskolai bántalmazás-ellenes programok. Falaccus Kiadó.
- Underwood, M. K., Scott, B. L., Galperin, M. B., Bjornstad, G. J., & Sexton, A. M. (2004). An observational study of social exclusion under varied conditions: Gender and developmental differences. *Child Development*, 75(5), 1538-1555.
- Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology*, 43(2), 267.
- Van Cleemput, K., Vandebosch, H., & Pabian, S. (2014). Personal characteristics and contextual factors that determine “helping,” “joining in,” and “doing nothing” when witnessing cyberbullying. *Aggressive Behavior*, 40(5), 383-396.
- Vandebosch, H., & Van Cleemput, K. (2008). Defining cyberbullying: A qualitative research into the perceptions of youngsters. *CyberPsychology & Behavior*, 11, 499-503.
- Vanderbilt, D., & Augustyn, M. (2010). The effects of bullying. *Paediatrics and Child Health*, 20(7), 315-320.
- Van der Graaff, J., Branje, S., De Wied, M., & Meeus, W. (2012). The moderating role of empathy in the association between parental support and adolescent aggressive and delinquent behavior. *Aggressive behavior*, 38(5), 368-377.
- Van Dijk, M. P., Branje, S., Keijsers, L., Hawk, S. T., Hale, W. W., & Meeus, W. (2014). Selfconcept clarity across adolescence: Longitudinal associations with open communication with parents and internalizing symptoms. *Journal of Youth and Adolescence*, 43(11), 1861–1876.
- Van Geel, M., Goemans, A., & Vedder, P. H. (2016). The relation between peer victimization and sleeping problems: A meta-analysis. *Sleep medicine reviews*, 27, 89-95.

van Geel, M., Goemans, A., Toprak, F., & Vedder, P. (2017). Which personality traits are related to traditional bullying and cyberbullying? A study with the Big Five, Dark Triad and sadism. *Personality and Individual Differences, 106*, 231-235.

Várnai D. (2019) *A kortársbántalmazás (bullying) egészségmagatartási és egészségpszichológiai kontextusban* [Unpublished Doctoral dissertation]. Eötvös Loránd University.

Várnai D. E., Jármí, É., Arnold, P., Demetrovics Zs., Németh Á., Kökönyei Gy., & Örkényi Á. (2018). A kortársbántalmazás (bullying) értelmezésének vizsgálata kvalitatív módszerrel – “Az iskoláskorú gyerekek egészségmagatartása” (HBSC) vizsgálat módszertanának kiegészítésére. *Magyar Pszichológiai Szemle, 73*, 519-539.

Vargha, A., & Tóth, M. (2007). Az Olson-féle családteszt magyar adaptációja. In. Bagdy E., Mirmics, Zs., Vargha A. (Eds.) *Egyén, pár, család* (pp. 288-309). Animula.

Várnai D. Zsíros E. (2014). Kortárs bántalmazás és verekedés In *Egészség és Egészségmagatartás Iskoláskorban*

Vazsonyi, A. T., Machackova, H., Sevcikova, A., Smahel, D., & Cerna, A. (2012). Cyberbullying in context: Direct and indirect effects by low self-control across 25 European countries. *European Journal of Developmental Psychology, 9*(2), 210-227.

Voltas, N., Hernández-Martínez, C., Arija, V., & Canals, J. (2017). The natural course of anxiety symptoms in early adolescence: factors related to persistence. *Anxiety, Stress, & Coping, 30*(6), 671-686.

Walrave, M., & Heirman, W. (2011). Cyberbullying: Predicting victimisation and perpetration. *Children & Society, 25*(1), 59-72.

Vranjes, I., Erreygers, S., Vandebosch, H., Baillien, E., & De Witte, H. (2018). Patterns of cybervictimization and emotion regulation in adolescents and adults. *Aggressive Behavior, 44*(6), 647-657.

Wang, J., Iannotti, R. J., Luk, J. W., & Nansel, T. R. (2010). Co-occurrence of victimization from five subtypes of bullying: Physical, verbal, social exclusion, spreading rumors, and cyber. *Journal of Pediatric Psychology, 35*(10), 1103-1112.

Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School bullying among adolescents in the United States: Physical, verbal, relational, and cyber. *Journal of Adolescent Health, 45*(4), 368-375.

Wang, X., Lei, L., Liu, D., & Hu, H. (2016). Moderating effects of moral reasoning and gender on the relation between moral disengagement and cyberbullying in adolescents. *Personality and Individual Differences, 98*, 244-249.

Webber, M. A. (2017). Bullying: University Students Bring a Moral Perspective to Middle School Students. *Journal of Education and Learning, 6*(3), 157-168.

White, F. A. (2000). Relationship of family socialization processes to adolescent moral thought. *The Journal of Social Psychology, 140*, 75-91.

- Wilburn, V. R., & Smith, D. E. (2005). Stress, self-esteem, and suicidal ideation in late adolescents. *Adolescence, 40*(157).
- Willard, N. E. (2007). *Cyberbullying and cyberthreats: Responding to the challenge of online social aggression, threats, and distress*. Research press.
- Williams, K. R., & Guerra, N. G. (2007). Prevalence and predictors of internet bullying. *Journal of Adolescent Health, 41*(6), 14-21.
- Wolak, J., Mitchell, K. J., & Finkelhor, D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence, 26*(1), 105-119.
- Wolke, D., Woods, S., Bloomfield, L., & Karstadt, L. (2001). Bullying involvement in primary school and common health problems. *Archives of Disease in Childhood, 85*(3), 197-201.
- Wong, D. S., Chan, H. C. O., & Cheng, C. H. (2014). Cyberbullying perpetration and victimization among adolescents in Hong Kong. *Children and Youth Services Review, 36*, 133–140.
- Ybarra, M. L. (2004). Linkages between depressive symptomatology and Internet harassment among young regular Internet users. *CyberPsychology & Behavior, 7*(2), 247-257.
- Ybarra, M. L., Boyd, D., Korchmaros, J. D., & Oppenheim, J. K. (2012). Defining and measuring cyberbullying within the larger context of bullying victimization. *Journal of Adolescent Health, 51*(1), 53-58.
- Ybarra, M. L., Diener-West, M., & Leaf, P. J. (2007). Examining the overlap in Internet harassment and school bullying: Implications for school intervention. *Journal of Adolescent Health, 41*(6), S42-S50.
- Ybarra, M. L., & Mitchell, K. J. (2004). Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry, 45*(7), 1308-1316.
- Ybarra, M. L., & Mitchell, K. J. (2008). How risky are social networking sites? A comparison of places online where youth sexual solicitation and harassment occurs. *Pediatrics, 121*, 350-357.
- You, S., & Kim, A. Y. (2016). Understanding aggression through attachment and social emotional competence in Korean middle school students. *School Psychology International, 37*(3), 255–270.
- Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental & Behavioral Pediatrics, 27*(2), 155-168.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*(1), 30-41.
- Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of personality assessment, 55*(3-4), 610-617.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2004). The scientific base linking emotional learning to student success and academic outcomes. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–22). Teachers College Press.

Zsila Á., Orosz G., Király O., Urbán R., Ujhelyi A., Jármí É., Griffiths, M. D., Elekes Zs., & Demetrovics Zs. (2018). Psychoactive substance use and problematic internet use as predictors of bullying and cyberbullying victimization. *International Journal of Mental Health and Addiction*, *16*(2), 466-479.

Zsila, Á., Urbán, R., Griffiths, M. D., & Demetrovics, Z. (2019a). Gender differences in the association between cyberbullying victimization and perpetration: The role of anger rumination and traditional bullying experiences. *International Journal of Mental Health and Addiction*, *17*(5), 1252-1267.

Zsila, Á., Urbán, R., & Demetrovics, Z. (2019b). Gender, rumination, and awareness of the perpetrator's identity as predictors of help-seeking among cyberbullying victims. *International Journal of Mental Health and Addiction*, *17*(4), 947-958.

Zych, I., Baldry, A. C., Farrington, D. P., & Llorent, V. J. (2019). Are children involved in cyberbullying low on empathy? A systematic review and meta-analysis of research on empathy versus different cyberbullying roles. *Aggression and Violent Behavior*, *45*, 83-97.

Zych, I., Farrington, D. P., & Ttofi, M. M. (2019). Protective factors against bullying and cyberbullying: A systematic review of meta-analyses. *Aggression and Violent Behavior*, *45*, 4-19.

APPENDICES

Appendix 1: Cyber Victim and Bullying Scale (Cetin et al., 2011)

Please, read the following items carefully. Indicate on a 5-point scale how often you did the described acts, where:

1= Never

2= Rarely

3= Occasionally

4= Frequently

5= Always

1. I spread rumours on the Internet.	1 2 3 4 5
2. I used nicknames on the Internet in a disturbing way.	1 2 3 4 5
3. I used offensive symbols on the Internet.	1 2 3 4 5
4. I mocked someone on the Internet.	1 2 3 4 5
5. I made fun of shared information on the Internet.	1 2 3 4 5
6. I wrote offensive comments about news on websites.	1 2 3 4 5
7. I used humiliating expressions on the Internet.	1 2 3 4 5
8. I used someone's identity without his/her permission on the Internet.	1 2 3 4 5
9. I hid my identity on the Internet.	1 2 3 4 5
10. I entered someone's private page without permission on the Internet.	1 2 3 4 5
11. I hacked someone's private webpage without permission.	1 2 3 4 5
12. I sent infected file/program via e-mails.	1 2 3 4 5
13. I shared videos without permission on the Internet.	1 2 3 4 5
14. I shared someone's photos without permission on the Internet.	1 2 3 4 5
15. I edited photos in offensive manner on the Internet.	1 2 3 4 5
16. I forced someone to talk about sexual issues on the Internet.	1 2 3 4 5
17. I used sexual symbols while chatting on the Internet.	1 2 3 4 5
18. I shared images with sexual content on the Internet.	1 2 3 4 5
19. I used abusive/insulting language in e-mails.	1 2 3 4 5
20. I used the Internet as a slandering tool.	1 2 3 4 5
21. I used the Internet as a propaganda tool for my own benefit.	1 2 3 4 5
22. I used the Internet for fraudulent acts.	1 2 3 4 5

Please, read the following items carefully. Indicate on a 5-point scale how often did the described acts happen to you, where:

1= Never

2= Rarely

3= Occasionally

4= Frequently

5= Always

1. Someone spread rumours about me on the Internet.	1 2 3 4 5
2. Someone used nicknames against me on the Internet in a disturbing way.	1 2 3 4 5
3. Someone used offensive symbols against me on the Internet.	1 2 3 4 5
4. Someone mocked me on the Internet.	1 2 3 4 5
5. Someone made fun of my shared information on the Internet.	1 2 3 4 5
6. Someone wrote offensive comments about news on websites.	1 2 3 4 5
7. Someone used humiliating expressions against me on the Internet.	1 2 3 4 5
8. Someone used my identity without my permission on the Internet.	1 2 3 4 5
9. They hide their identity on the Internet.	1 2 3 4 5
10. Someone entered my private page without permission on the Internet.	1 2 3 4 5
11. Someone hacked my private webpage without permission.	1 2 3 4 5
12. Someone sent me infected file/program via e-mails.	1 2 3 4 5
13. Someone shared videos of me without my permission on the Internet.	1 2 3 4 5
14. Someone shared my photos without permission on the Internet.	1 2 3 4 5
15. Someone edited my photos in offensive manner on the Internet.	1 2 3 4 5
16. Someone forced me to talk about sexual issues on the Internet.	1 2 3 4 5
17. Someone used sexual symbols while chatting with me on the Internet.	1 2 3 4 5
18. Someone shared images with me with sexual content on the Internet.	1 2 3 4 5
19. Someone used abusive/insulting language against me in e-mails.	1 2 3 4 5
20. Someone used the Internet as a slandering tool.	1 2 3 4 5
21. Someone used the Internet as a propaganda tool for their own benefit.	1 2 3 4 5
22. Someone used the Internet for fraudulent acts.	1 2 3 4 5

**Kérlek, értékeld az alábbi állításokat aszerint, hogy mennyire gyakran jellemzőek Rád ezek a viselkedésmódo-
Minden állításnál karikázd be azt a számot, amelyik kifejezi, mennyire igazak rád az alábbi mondatok.**

- 1=soha**
2=ritkán
3=alkalmanként
4=gyakran
5=mindig

1. Pletykákat, híreket terjesztek az interneten.	1 2 3 4 5
2. Álneveket használok az interneten, hogy megzavarjak ezzel másokat.	1 2 3 4 5
3. Sértő szimbólumokat használok az interneten.	1 2 3 4 5
4. Gúnyolódok az interneten.	1 2 3 4 5
5. Viccet csinállok az interneten megosztott információkból.	1 2 3 4 5
6. A weboldalak híreihez sértő, goromba megjegyzéseket fűzök hozzá.	1 2 3 4 5
7. Lealacsonyító, megalázó kifejezéseket használok az interneten.	1 2 3 4 5
8. Engedély nélkül használom más(ok) személyazonosságát az interneten.	1 2 3 4 5
9. Elrejttem a személyazonosságomat az interneten.	1 2 3 4 5
10. Engedély nélkül lépek be más(ok) privát internetes profiljába.	1 2 3 4 5
11. Engedély nélkül feltöröm más(ok) privát weboldalát, internetes profilját.	1 2 3 4 5
12. E-mailen keresztül vírusos fájlokat, programokat küldök.	1 2 3 4 5
13. Engedély nélkül osztok meg videókat az interneten.	1 2 3 4 5
14. Más(ok) fényképeit a bejegyzésük nélkül is megosztom az interneten.	1 2 3 4 5
15. Bántó szándékkal szerkesztek át képeket az interneten.	1 2 3 4 5
16. Kényszerítek másokat, hogy szexuális témákról beszéljenek az interneten.	1 2 3 4 5
17. Szexuális szimbólumokat használok az interneten beszélgetés közben.	1 2 3 4 5
18. Szexuális tartalmú képeket osztok meg az interneten.	1 2 3 4 5
19. Sértő, megalázó kifejezéseket használok e-mailekben.	1 2 3 4 5
20. Rágalmazásra használom az internetet.	1 2 3 4 5
21. Az internetet saját népszerűsítésem növelésére használom.	1 2 3 4 5
22. Tisztességtelen dolgokra, csalásra használom az internetet.	1 2 3 4 5

**Kérlek, értékeld az alábbi állításokat aszerint, hogy mennyire gyakran történnek meg Veled vagy fordulnak elő a
környezetemben a következő események. Minden állításnál karikázd be azt a számot, amelyik kifejezi, mennyire
igazak rád az alábbi mondatok.**

- 1=soha**
2=ritkán
3=alkalmanként
4=gyakran
5=mindig

1. Pletykákat, híreket terjesztenek rólam az interneten.	1 2 3 4 5
2. Mások álneveket használnak az interneten, hogy megzavarjanak ezzel.	1 2 3 4 5
3. Sértő szimbólumokat használnak ellenem az interneten.	1 2 3 4 5
4. Gúnyolódnak rajtam az interneten.	1 2 3 4 5
5. Viccet csinálnak az interneten megosztott információimból.	1 2 3 4 5
6. A weboldalak híreihez sértő, goromba megjegyzéseket fűznek hozzá.	1 2 3 4 5
7. Lealacsonyító, megalázó kifejezéseket használnak az interneten.	1 2 3 4 5
8. Engedély nélkül használják a személyazonosságomat az interneten.	1 2 3 4 5
9. Elrejtik a személyazonosságukat az interneten.	1 2 3 4 5
10. Mások engedély nélkül lépnek be a privát internetes profilomba.	1 2 3 4 5
11. Engedély nélkül feltörik a privát weboldalamat, internetes profilomat.	1 2 3 4 5
12. E-mailen keresztül vírusos fájlokat, programokat küldenek nekem.	1 2 3 4 5
13. Engedély nélkül osztanak meg rólam videókat az interneten.	1 2 3 4 5
14. A fényképeimet a bejegyzésem nélkül is megosztják az interneten.	1 2 3 4 5
15. Bántó szándékkal szerkesztenek át képeket rólam az interneten.	1 2 3 4 5
16. Kényszerítenek, hogy szexuális témákról beszéljek az interneten.	1 2 3 4 5
17. Szexuális szimbólumokat használnak az interneten beszélgetés közben.	1 2 3 4 5
18. Szexuális tartalmú képeket osztanak meg az interneten.	1 2 3 4 5
19. Sértő, megalázó kifejezéseket használnak e-mailekben.	1 2 3 4 5
20. Rágalmazásra használják az internetet.	1 2 3 4 5
21. Mások az internetet saját maguk népszerűsítésére használják.	1 2 3 4 5
22. Tisztességtelen dolgokra, csalásra használják az internetet.	1 2 3 4 5

Appendix 2: Interpersonal Reactivity Index (Davis, 1983)

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: 0, 1, 2, 3, or 4. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can.

Answer scale: 0 = does not describe me well; 4 = describes me very well

1. I daydream and fantasize, with some regularity, about things that might happen to me.	0	1	2	3	4
2. I often have tender, concerned feelings for people less fortunate than me.	0	1	2	3	4
3. I sometimes find it difficult to see things from the "other guy's" point of view.	0	1	2	3	4
4. Sometimes I don't feel very sorry for other people when they are having problems.	0	1	2	3	4
5. I really get involved with the feelings of the characters in a novel.	0	1	2	3	4
6. In emergency situations, I feel apprehensive and ill-at-ease.	0	1	2	3	4
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.	0	1	2	3	4
8. I try to look at everybody's side of a disagreement before I make a decision.	0	1	2	3	4
9. When I see someone being taken advantage of, I feel kind of protective towards them.	0	1	2	3	4
10. I sometimes feel helpless when I am in the middle of a very emotional situation.	0	1	2	3	4
11. I sometimes try to understand my friends better by imagining how things look from their perspective.	0	1	2	3	4
12. Becoming extremely involved in a good book or movie is somewhat rare for me.	0	1	2	3	4
13. When I see someone get hurt, I tend to remain calm.	0	1	2	3	4
14. Other people's misfortunes do not usually disturb me a great deal.	0	1	2	3	4
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.	0	1	2	3	4
16. After seeing a play or movie, I have felt as though I were one of the characters.	0	1	2	3	4
17. Being in a tense emotional situation scares me.	0	1	2	3	4
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	0	1	2	3	4
19. I am usually pretty effective in dealing with emergencies.	0	1	2	3	4
20. I am often quite touched by things that I see happen.	0	1	2	3	4
21. I believe that there are two sides to every question and try to look at them both.	0	1	2	3	4
22. I would describe myself as a pretty soft-hearted person.	0	1	2	3	4
23. When I watch a good movie, I can very easily put myself in the place of a leading character.	0	1	2	3	4
24. I tend to lose control during emergencies.	0	1	2	3	4
25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.	0	1	2	3	4
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.	0	1	2	3	4
27. When I see someone who badly needs help in an emergency, I go to pieces.	0	1	2	3	4
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.	0	1	2	3	4

Appendix 3: Anger Expression Scale (Spielberger et al., 1985)

Everyone feels angry or furious from time to time, but people differ in the ways that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel angry or furious. Read each statement and then indicate how often you generally react, or behave in the manner described when you are feeling angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement.

- 1= Almost never
- 2= Sometimes
- 3= Often
- 4= Almost always

When angry or furious...

- | | | | | |
|--|---|---|---|---|
| 1. I control my temper. | 1 | 2 | 3 | 4 |
| 2. I express my anger. | 1 | 2 | 3 | 4 |
| 3. I control my urge to express my angry feelings. | 1 | 2 | 3 | 4 |
| 4. I fly off the handle. | 1 | 2 | 3 | 4 |
| 5. I pout or sulk. | 1 | 2 | 3 | 4 |
| 6. I withdraw from people. | 1 | 2 | 3 | 4 |
| 7. I make sarcastic remarks to others. | 1 | 2 | 3 | 4 |
| 8. I keep my cool. | 1 | 2 | 3 | 4 |
| 9. I do things like slamming doors. | 1 | 2 | 3 | 4 |
| 10. I boil inside but I don't show it. | 1 | 2 | 3 | 4 |
| 11. I argue with others. | 1 | 2 | 3 | 4 |
| 12. I tend to harbour grudges that I don't tell anyone about. | 1 | 2 | 3 | 4 |
| 13. I strike out at whatever infuriates me. | 1 | 2 | 3 | 4 |
| 14. I am secretly quite critical of others. | 1 | 2 | 3 | 4 |
| 15. I am angrier than I am willing to admit. | 1 | 2 | 3 | 4 |
| 16. I reduce my anger as soon as possible. | 1 | 2 | 3 | 4 |
| 17. I say nasty things. | 1 | 2 | 3 | 4 |
| 18. I'm irritated a great deal more than people are aware of. | 1 | 2 | 3 | 4 |
| 19. I lose my temper. | 1 | 2 | 3 | 4 |
| 20. If someone annoys me, I'm apt to tell him or her how I feel. | 1 | 2 | 3 | 4 |

Appendix 4: School climate questions (Twemlow & Sacco, 2012)

Circle the number to show how much your school is like each statement.

1: I don't agree at all; 2: I agree a little; 3: I agree a lot; 4: I completely agree

1. I like my school.	1	2	3	4
2. It is easy to be myself at school.	1	2	3	4
3. My teachers treat me with respect.	1	2	3	4
4. I feel in tune with the people around me at school.	1	2	3	4
5. I feel the teachers know me well at school.	1	2	3	4
6. No one really knows me well at school.	1	2	3	4
7. I feel like I belong or fit in at school.	1	2	3	4
8. Students in my school are very competitive in grades.	1	2	3	4
9. Students in my school are very competitive in sports or other after-school activities.	1	2	3	4
10. I feel a lot of pressure to make good grades.	1	2	3	4
11. I often feel I am lost among all the other students.	1	2	3	4
12. I feel a lot of pressure to do well at sports or other after-school activities.	1	2	3	4
13. I feel that my teacher understands me.	1	2	3	4
14. If you are not the best at something, you do not matter much at school.	1	2	3	4
15. I wish I could go to another school.	1	2	3	4

Appendix 5: European Cyberbullying Intervention Project Questionnaire (Del Rey et al., 2015)

In the last one year, how often did the following situations happened to you?

0 = never

1 = once or twice

2 = once a month

3 = once a week

4 = more times a week

1. Someone said nasty things to me or called me names using texts or online messages	0	1	2	3	4
2. Someone said nasty things about me to others either online or through text messages	0	1	2	3	4
3. Someone threatened me through texts or online messages	0	1	2	3	4
4. Someone hacked into my account and stole personal information (e.g. through email or social networking accounts)	0	1	2	3	4
5. Someone hacked into my account and pretended to be me (e.g. through instant messaging or social networking accounts)	0	1	2	3	4
6. Someone created a fake account, pretending to be me (e.g. on Facebook or MSN)	0	1	2	3	4
7. Someone posted personal information about me online	0	1	2	3	4
8. Someone posted embarrassing videos or pictures of me online	0	1	2	3	4
9. Someone altered pictures or videos of me that I had posted online	0	1	2	3	4
10. I was excluded or ignored by others in a social networking site or internet chat room.	0	1	2	3	4
11. Someone spread rumours about me on the internet	0	1	2	3	4

In the last one year, how often did you engage in the following activities?

0 = never

1 = once or twice

2 = once a month

3 = once a week

4 = more times a week

1. I said nasty things to someone or called them names using texts or online messages	0	1	2	3	4
2. I said nasty things about someone to other people either online or through text messages	0	1	2	3	4
3. I threatened someone through texts or online messages	0	1	2	3	4
4. I hacked into someone's account and stole personal information (e.g. through email or social networking accounts)	0	1	2	3	4
5. I hacked into someone's account and pretended to be them (e.g. through instant messaging or social networking accounts)	0	1	2	3	4
6. I created a fake account, pretending to be someone else (e.g. on Facebook or MSN)	0	1	2	3	4
7. I posted personal information about someone online	0	1	2	3	4
8. I posted embarrassing videos or pictures of someone online	0	1	2	3	4
9. I altered pictures or videos of another person that had been posted online	0	1	2	3	4
10. I excluded or ignored someone in a social networking site or internet chat room	0	1	2	3	4
11. I spread rumours about someone on the internet	0	1	2	3	4

Ha visszagondolsz az elmúlt egy évre, milyen gyakran történtek meg veled az alábbiak?

0 = soha

1 = egyszer vagy kétszer

2 = egyszer egy hónapban

3 = egyszer egy héten

4 = többször egy héten

1. Valaki bántó dolgokat mondott nekem vagy gúnyolt online üzenetekben, kommentekben vagy sms-ben.	0	1	2	3	4
2. Valaki bántó dolgokat mondott rólam másoknak online vagy telefonon.	0	1	2	3	4
3. Valaki megfenyegetett sms-ben vagy online üzenetekben.	0	1	2	3	4
4. Valaki feltörte a profilomat és személyes információkat, képeket lopott tőlem (pl. e-mail fiókot, közösségi oldalon profilt).	0	1	2	3	4
5. Valaki feltörte a profilomat és a nevemben chatelt az ismerőseimmel, osztott meg tartalmakat, stb.	0	1	2	3	4
6. Valaki létrehozott egy hamis profilt és úgy tett, mintha az én lennék (Facebook-on, Instagram-on, stb.).	0	1	2	3	4
7. Valaki személyes/bizalmas információkat, képeket posztolt rólam online.	0	1	2	3	4
8. Valaki megalázó videókat vagy képeket posztolt rólam online.	0	1	2	3	4
9. Az általam online posztolt videókat vagy képeket valaki átszerkesztette és megosztotta online.	0	1	2	3	4
10. Kizártak vagy levegőnek néztek közösségi oldalakon, online csoportokban, online beszélgetésekben.	0	1	2	3	4
11. Valaki pletykát terjesztett rólam az interneten.	0	1	2	3	4

Ha visszagondolsz az elmúlt egy évre, milyen gyakran tetted a következőket?

0 = soha

1 = egyszer vagy kétszer

2 = egyszer egy hónapban

3 = egyszer egy héten

4 = többször egy héten

1. Bántó dolgokat mondtam valakinek vagy gúnyoltam valakit sms-ben, kommentekben vagy online üzenetben.	0	1	2	3	4
2. Bántó dolgokat mondtam valakiról másoknak online vagy telefonon.	0	1	2	3	4
3. Megfenyegettem valakit sms-ben vagy online üzenetben.	0	1	2	3	4
4. Feltörtem valakinek a profilját és személyes információkat, képeket loptam tőle (pl. email fiókot, közösségi oldalon profilt).	0	1	2	3	4
5. Feltörtem valakinek a profilját és a nevében chateltem az ismerőseivel, megosztottam tartalmakat, stb.	0	1	2	3	4
6. Létrehoztam egy hamis profilt valakiról és úgy tettem, mintha ő lennék (Facebook-on, Instagram-on, stb.).	0	1	2	3	4
7. Személyes, bizalmas információkat, képeket posztoltam valakiról online.	0	1	2	3	4
8. Megalázó videókat, képeket posztoltam valakiról online.	0	1	2	3	4
9. Valaki más által online posztolt videókat, képeket átszerkesztettem és megosztottam online.	0	1	2	3	4
10. Kizártam vagy levegőnek néztem valakit közösségi oldalakon, online csoportokban, online beszélgetésekben.	0	1	2	3	4
11. Pletykát terjesztettem valakiról online.	0	1	2	3	4

Appendix 6: Multidimensional Scale of Perceived Social Support (Zimet et al., 1988, 1990)

Please read every item very thoroughly and decide to what degree they are true of you .	Very strongly disagree							Strongly agree
1. There is a special person who is around when I am in need.	1	2	3	4	5	6	7	
2. There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	
3. My family really tries to help me.	1	2	3	4	5	6	7	
4. I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	
5. I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	
6. My friends really try to help me.	1	2	3	4	5	6	7	
7. I can count on my friends when things go wrong.	1	2	3	4	5	6	7	
8. I can talk about my problems with my family.	1	2	3	4	5	6	7	
9. I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	
10. There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	
11. My family is willing to help me make decisions.	1	2	3	4	5	6	7	
12. I can talk about my problems with my friends.	1	2	3	4	5	6	7	

Appendix 7: Child Behavior Check List (Achenbach & Edelbrock, 1991)

You can read items about youth's behaviour. Please, indicate how much these items apply to you.

	Not true	Somewhat or sometimes true	Very true or often true
1. I argue a lot.	1	2	3
2. I have trouble concentrating or paying attention.	1	2	3
3. I have trouble sitting still.	1	2	3
4. I am too dependent on adults.	1	2	3
5. I feel lonely.	1	2	3
6. I feel confused or in a fog.	1	2	3
7. I cry a lot.	1	2	3
8. I am mean to others.	1	2	3
9. I daydream a lot.	1	2	3
10. I try to get a lot of attention.	1	2	3
11. I destroy my own and others' things.	1	2	3
12. I disobey my parents and at school.	1	2	3
13. I don't get along with other kids.	1	2	3
14. I am afraid I might thin or do something bad.	1	2	3
15. I feel that no one loves me.	1	2	3
16. I feel that others are out to get me.	1	2	3
17. I feel worthless or inferior.	1	2	3
18. I get in many fights.	1	2	3
19. I get teased a lot.	1	2	3
20. I hang around with ids who get in trouble.	1	2	3
21. I act without stopping to think.	1	2	3
22. I would rather be alone than with others.	1	2	3
23. I lie or cheat.	1	2	3
24. I am nervous or tense.	1	2	3
25. I am not liked by other kids.	1	2	3
26. I am too fearful or anxious.	1	2	3
27. I feel dizzy or lightheaded.	1	2	3
28. I feel overtired without good reason.	1	2	3
29. I have headaches without known medical cause.	1	2	3
30. I have nausea/feel sick without known medical cause.	1	2	3
31. I have stomachaches without known medical cause.	1	2	3
32. I vomit/throw up without known medical cause.	1	2	3
33. I physically attack people.	1	2	3
34. My school work is poor.	1	2	3
35. I would rather be with older kids than kids of my own age.	1	2	3
36. I refuse to talk.	1	2	3
37. I am too shy or timid.	1	2	3
38. I steal at home or from other places.	1	2	3
39. I swear or use dirty language.	1	2	3
40. I have a hot temper.	1	2	3
41. I cut classes or skip school.	1	2	3
42. I am unhappy, sad, or depressed.	1	2	3
43. I keep from getting involved with others.	1	2	3
44. I worry a lot.	1	2	3

Appendix 8: Short version of the Cyber Victim and Bullying Scale

Please, read the following items carefully. Indicate on a 5-point scale how often you did the described acts, where:

- 1= Never
- 2= Rarely
- 3= Occasionally
- 4= Frequently
- 5= Always

- | | | | | | |
|--|---|---|---|---|---|
| 1. I used offensive symbols on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 2. I mocked someone on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 3. I wrote offensive comments about news on websites. | 1 | 2 | 3 | 4 | 5 |
| 4. I used humiliating expressions on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 5. I used someone's identity without his/her permission on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 6. I hacked someone's private webpage without permission. | 1 | 2 | 3 | 4 | 5 |
| 7. I shared someone's photos without permission on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 8. I edited photos in offensive manner on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 9. I used abusive/insulting language in e-mails. | 1 | 2 | 3 | 4 | 5 |
| 10. I used the Internet as a slandering tool. | 1 | 2 | 3 | 4 | 5 |
| 11. I used the Internet for fraudulent acts. | | | | | |

Please, read the following items carefully. Indicate on a 5-point scale how often did the described acts happen to you, where:

- 1= Never
- 2= Rarely
- 3= Occasionally
- 4= Frequently
- 5= Always

- | | | | | | |
|---|---|---|---|---|---|
| 12. Someone wrote offensive comments about news on websites. | 1 | 2 | 3 | 4 | 5 |
| 13. Someone used humiliating expressions against me on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 14. Someone used my identity without my permission on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 15. They hide their identity on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 16. Someone shared videos of me without my permission on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 17. Someone used sexual symbols while chatting with me on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 18. Someone shared images with me with sexual content on the Internet. | 1 | 2 | 3 | 4 | 5 |
| 19. Someone used abusive/insulting language against me in e-mails. | 1 | 2 | 3 | 4 | 5 |
| 20. Someone used the Internet as a slandering tool. | 1 | 2 | 3 | 4 | 5 |
| 21. Someone used the Internet as a propaganda tool for their own benefit. | 1 | 2 | 3 | 4 | 5 |
| 22. Someone used the Internet for fraudulent acts. | 1 | 2 | 3 | 4 | 5 |

Kérlek, értékeld az alábbi állításokat aszerint, hogy mennyire gyakran jellemzőek Rád ezek a viselkedésformák. Minden állításnál karikázd be azt a számot, amelyik kifejezi, mennyire igazak rád az alábbi mondatok.

- 1=soha
- 2=ritkán
- 3=alkalmanként
- 4=gyakran
- 5=mindig

- | | | | | | |
|--|---|---|---|---|---|
| 1. Sértő szimbólumokat használok az interneten. | 1 | 2 | 3 | 4 | 5 |
| 2. Gúnyolódok az interneten. | 1 | 2 | 3 | 4 | 5 |
| 3. A weboldalak híreihez sértő, goromba megjegyzéseket fűzök hozzá. | 1 | 2 | 3 | 4 | 5 |
| 4. Lealacsonyító, megalázó kifejezéseket használok az interneten. | 1 | 2 | 3 | 4 | 5 |
| 5. Engedély nélkül használom más(ok) személyazonosságát az interneten. | 1 | 2 | 3 | 4 | 5 |
| 6. Engedély nélkül feltöröm más(ok) privát weboldalát, internetes profilját. | 1 | 2 | 3 | 4 | 5 |
| 7. Más(ok) fényképeit a beleegyezésük nélkül is megosztom az interneten. | 1 | 2 | 3 | 4 | 5 |
| 8. Bántó szándékkal szerkesztek át képeket az interneten. | 1 | 2 | 3 | 4 | 5 |
| 9. Sértő, megalázó kifejezéseket használok e-mailekben. | 1 | 2 | 3 | 4 | 5 |
| 10. Rágalmazásra használom az internetet. | 1 | 2 | 3 | 4 | 5 |
| 11. Tisztelességtelen dolgokra, csalásra használom az internetet. | 1 | 2 | 3 | 4 | 5 |

Kérlek, értékeld az alábbi állításokat aszerint, hogy mennyire gyakran történnek meg Veled vagy fordulnak elő a környezetemben a következő események. Minden állításnál karikázd be azt a számot, amelyik kifejezi, mennyire igazak rád az alábbi mondatok.

1=soha

2=ritkán

3=alkalmanként

4=gyakran

5=mindig

6. A weboldalak híreihez sértő, goromba megjegyzéseket fűznek hozzá.	1	2	3	4	5
7. Lealacsonyító, megalázó kifejezéseket használnak az interneten.	1	2	3	4	5
8. Engedély nélkül használják a személyazonosságomat az interneten.	1	2	3	4	5
9. Elrejtik a személyazonosságukat az interneten.	1	2	3	4	5
13. Engedély nélkül osztanak meg rólam videókat az interneten.	1	2	3	4	5
17. Szexuális szimbólumokat használnak az interneten beszélgetés közben.	1	2	3	4	5
18. Szexuális tartalmú képeket osztanak meg az interneten.	1	2	3	4	5
19. Sértő, megalázó kifejezéseket használnak e-mailekben.	1	2	3	4	5
20. Rágalmazásra használják az internetet.	1	2	3	4	5
21. Mások az internetet saját maguk népszerűsítésére használják.	1	2	3	4	5
22. Tisztességtelen dolgokra, csalásra használják az internetet.	1	2	3	4	5

Appendix 9: Empathy Questionnaire for Children and Adolescents (Overgaauw et al., 2017)

Please rate to what extent the following descriptions are true for you. Use the following scale to indicate your answer:

1=not true;

2=somewhat true;

3=true

1. If my mother is happy, I also feel happy.	1	2	3
2. I often feel sad when I watch a sad movie.	1	2	3
3. When a friend is upset, I feel upset too.	1	2	3
4. When a friend cries, I cry myself.	1	2	3
5. If someone in my family is sad, I feel really bad.	1	2	3
6. I feel awful when two people quarrel.	1	2	3
7. When a friend is angry, I tend to know why.	1	2	3
8. If a friend is sad, I understand mostly why.	1	2	3
9. If a friend cries, I often understand what has happened.	1	2	3
10. If a friend is sad, I like to comfort him/her.	1	2	3
11. I would like to help when a friend gets angry.	1	2	3
12. If a friend has an argument, I try to help.	1	2	3
13. I want everyone to feel good.	1	2	3
14. If a friend is sad, I want to do something to make it better.	1	2	3

Appendix 10: Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2007)

Everybody experiences negative or difficult situations from time to time and everybody copes with these in different ways. Please, indicate on a scale from 1 to 5 how often you think about the following things when something bad happens to you.

	Almost never				Always
1. I feel that I am the one to blame for it.	1	2	3	4	5
2. I think that I have to accept that this has happened.	1	2	3	4	5
3. I often think about how I feel about what I have experienced.	1	2	3	4	5
4. I think of nicer things than what I have experienced.	1	2	3	4	5
5. I think of what I can do best.	1	2	3	4	5
6. I think I can learn something from the situation.	1	2	3	4	5
7. I think that it all could have been much worse.	1	2	3	4	5
8. I often think that what I have experienced is much worse than what others have experienced.	1	2	3	4	5
9. I feel that others are to blame for it.	1	2	3	4	5
10. I feel that I am the one who is responsible for what has happened.	1	2	3	4	5
11. I think that I have to accept the situation.	1	2	3	4	5
12. I am preoccupied with what I think and feel about what I have experienced.	1	2	3	4	5
13. I think of pleasant things that have nothing to do with it.	1	2	3	4	5
14. I think about how I can best cope with the situation.	1	2	3	4	5
15. I think that I can become a stronger person as a result of what has happened.	1	2	3	4	5
16. I think that other people go through much worse experiences.	1	2	3	4	5
17. I keep thinking about how terrible it is what I have experienced.	1	2	3	4	5
18. I feel that others are responsible for what has happened.	1	2	3	4	5
19. I think about the mistakes I have made in this matter.	1	2	3	4	5
20. I think that I cannot change anything about it.	1	2	3	4	5
21. I want to understand why I feel the way I do about what I have experienced.	1	2	3	4	5
22. I think of something nice instead of what has happened.	1	2	3	4	5
23. I think about how to change the situation.	1	2	3	4	5
24. I think that the situation also has its positive sides.	1	2	3	4	5
25. I think that it hasn't been too bad compared to other things.	1	2	3	4	5
26. I often think that what I have experienced is the worst that can happen to a person.	1	2	3	4	5
27. I think about the mistakes others have made in this matter.	1	2	3	4	5
28. I think that basically the cause must lie within myself.	1	2	3	4	5
29. I think that I must learn to live with it.	1	2	3	4	5
30. I dwell upon the feelings the situation has evoked in me.	1	2	3	4	5
31. I think about pleasant experiences.	1	2	3	4	5
32. I think about a plan of what I can do best.	1	2	3	4	5
33. I look for the positive sides to the matter.	1	2	3	4	5
34. I tell myself that there are worse things in life.	1	2	3	4	5
35. I continually think how horrible the situation has been.	1	2	3	4	5
36. I feel that basically the cause lies with others.	1	2	3	4	5

Appendix 11: Moral Disengagement Cyber Bullying Scale (Bussey et al., 2015)

How much do you agree with each statement?

1 = Disagree; 4 = Totally agree

It's alright to send a mean message using a mobile phone or the internet to someone if they have poked fun at your friends	1	2	3	4
If kids are annoying it is their own fault if they get sent a mean message on their mobile phones or through the internet	1	2	3	4
Sending a mean message about someone using mobile phones or the internet is just a way of joking around	1	2	3	4
It's okay to send a mean message to another kid using a mobile phone or email because posting it on Facebook for everyone to see is worse	1	2	3	4
A kid who only suggests sending a mean message using a mobile phone or the internet to another kid should not be blamed if other kids go ahead and do it	1	2	3	4
Kids cannot be blamed for sending mean comments using mobile phones or the internet when everyone else is doing it	1	2	3	4
Sending mean comments about other kids using mobile phones or the internet does not really harm them	1	2	3	4
Some kids who are cyberbullied deserve to be treated like animals	1	2	3	4

Appendix 12: Difficulties in Emotion Regulation Scale (Gatz & Roemer, 2004)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1. almost never (0-10%)
2. sometimes (11-35%)
3. about half the time (36-65%)
4. most of the time (66-90%)
5. almost always (91-100%)

1. I am clear about my feelings.	1	2	3	4	5
2. I pay attention to how I feel.	1	2	3	4	5
3. I experience my emotions as overwhelming and out of control.	1	2	3	4	5
4. I have no idea how I am feeling.	1	2	3	4	5
5. I have difficulty making sense out of my feelings.	1	2	3	4	5
6. I am attentive to my feelings.	1	2	3	4	5
7. I know exactly how I am feeling.	1	2	3	4	5
8. I care about what I am feeling.	1	2	3	4	5
9. I am confused about how I feel.	1	2	3	4	5
10. When I'm upset, I acknowledge my emotions.	1	2	3	4	5
11. When I'm upset, I become angry with myself for feeling that way.	1	2	3	4	5
12. When I'm upset, I become embarrassed for feeling that way.	1	2	3	4	5
13. When I'm upset, I have difficulty getting work done.	1	2	3	4	5
14. When I'm upset, I become out of control.	1	2	3	4	5
15. When I'm upset, I believe that I will remain that way for a long time.	1	2	3	4	5
16. When I'm upset, I believe that I will end up feeling very depressed.	1	2	3	4	5
17. When I'm upset, I believe that my feelings are valid and important.	1	2	3	4	5
18. When I'm upset, I have difficulty focusing on other things.	1	2	3	4	5
19. When I'm upset, I feel out of control.	1	2	3	4	5
20. When I'm upset, I can still get things done.	1	2	3	4	5
21. When I'm upset, I feel ashamed at myself for feeling that way.	1	2	3	4	5
22. When I'm upset, I know that I can find a way to eventually feel better.	1	2	3	4	5
23. When I'm upset, I feel like I am weak.	1	2	3	4	5
24. When I'm upset, I feel like I can remain in control of my behaviors.	1	2	3	4	5
25. When I'm upset, I feel guilty for feeling that way.	1	2	3	4	5
26. When I'm upset, I have difficulty concentrating.	1	2	3	4	5
27. When I'm upset, I have difficulty controlling my behaviors.	1	2	3	4	5
28. When I'm upset, I believe there is nothing I can do to make myself feel better.	1	2	3	4	5
29. When I'm upset, I become irritated at myself for feeling that way.	1	2	3	4	5
30. When I'm upset, I start to feel very bad about myself.	1	2	3	4	5
31. When I'm upset, I believe that wallowing in it is all I can do.	1	2	3	4	5
32. When I'm upset, I lose control over my behavior.	1	2	3	4	5
33. When I'm upset, I have difficulty thinking about anything else.	1	2	3	4	5
34. When I'm upset I take time to figure out what I'm really feeling.	1	2	3	4	5
35. When I'm upset, it takes me a long time to feel better.	1	2	3	4	5
36. When I'm upset, my emotions feel overwhelming.	1	2	3	4	5

Appendix 13: FACES IV (Olson)

Fill in the corresponding number in the blank provided before each question using the table above each section. Please use only one number.

1	2	3	4	5
Strongly Disagree	Generally Disagree	Undecided	Generally Agree	Strongly Agree

- ___ 1. Family members are involved in each other's lives.
- ___ 2. Our family tries new ways of dealing with problems.
- ___ 3. We get along better with people outside our family than inside.
- ___ 4. We spend too much time together.
- ___ 5. There are strict consequences for breaking the rules in our family.
- ___ 6. We never seem to get organized in our family.
- ___ 7. Family members feel very close to each other.
- ___ 8. Parents equally share leadership in our family.
- ___ 9. Family members seem to avoid contact with each other when at home.
- ___ 10. Family members feel pressured to spend most free time together.
- ___ 11. There are clear consequences when a family member does something wrong.
- ___ 12. It is hard to know who the leader is in our family.
- ___ 13. Family members are supportive of each other during difficult times.
- ___ 14. Discipline is fair in our family.
- ___ 15. Family members know very little about the friends of other family members.
- ___ 16. Family members are too dependent on each other.
- ___ 17. Our family has a rule for almost every possible situation.
- ___ 18. Things do not get done in our family.
- ___ 19. Family members consult other family members on important decisions.
- ___ 20. My family is able to adjust to change when necessary.
- ___ 21. Family members are on their own when there is a problem to be solved.
- ___ 22. Family members have little need for friends outside the family.
- ___ 23. Our family is highly organized.
- ___ 24. It is unclear who is responsible for things (chores, activities) in our family.
- ___ 25. Family members like to spend some of their free time with each other.
- ___ 26. We shift household responsibilities from person to person.
- ___ 27. Our family seldom does things together.
- ___ 28. We feel too connected to each other.
- ___ 29. Our family becomes frustrated when there is a change in our plans or routines.
- ___ 30. There is no leadership in our family.
- ___ 31. Although family members have individual interests, they still participate in family activities.
- ___ 32. We have clear rules and roles in our family.
- ___ 33. Family members seldom depend on each other.
- ___ 34. We resent family members doing things outside the family.
- ___ 35. It is important to follow the rules in our family.
- ___ 36. Our family has a hard time keeping track of who does various household tasks.
- ___ 37. Our family has a good balance of separateness and closeness.
- ___ 38. When problems arise, we compromise.
- ___ 39. Family members mainly operate independently.
- ___ 40. Family members feel guilty if they want to spend time away from the family.
- ___ 41. Once a decision is made, it is very difficult to modify that decision.
- ___ 42. Our family feels hectic and disorganized.
- ___ 43. Family members are satisfied with how they communicate with each other.
- ___ 44. Family members are very good listeners.
- ___ 45. Family members express affection to each other.
- ___ 46. Family members are able to ask each other for what they want.
- ___ 47. Family members can calmly discuss problems with each other.
- ___ 48. Family members discuss their ideas and beliefs with each other.
- ___ 49. When family members ask questions of each other, they get honest answers.
- ___ 50. Family members try to understand each other's feelings.
- ___ 51. When angry, family members seldom say negative things about each other.
- ___ 52. Family members express their true feelings to each other.

1	2	3	4	5
Very Dissatisfied	Somewhat Dissatisfied	Generally Satisfied	Very Satisfied	Extremely Satisfied

How satisfied are you with:

- ___ 53. The degree of closeness between family members.
- ___ 54. Your family's ability to cope with stress.
- ___ 55. Your family's ability to be flexible.
- ___ 56. Your family's ability to share positive experiences.
- ___ 57. The quality of communication between family members.
- ___ 58. Your family's ability to resolve conflicts.
- ___ 59. The amount of time you spend together as a family.
- ___ 60. The way problems are discussed.
- ___ 61. The fairness of criticism in your family.
- ___ 62. Family members' concern for each other.

Appendix 14: Modified PROM

1. When logging into Facebook, you see that one of your closest friends changed his profile picture to his girlfriend's sexual/suggestive picture. You know that your friend does not like to be told how he should behave. Therefore, if you would tell him to delete the picture, he would quarrel with you and even your friendship would be at stake. This happened only a few second ago, so there are no reactions to the picture yet. What would you do?

- A) I would ask my friend to take the picture down.
- B) I find the choice of the new profile picture funny and I would share it with others as well.
- C) I would not care about it.

Rate the importance of the following six reasons in your decision about helping or not helping in this situation on this scale where 1=not at all important; 5=very important.

It depends how funny the situations is.	1	2	3	4	5
It depends whether the other one needs help or not.	1	2	3	4	5
It depends whether your friends/family would approve of your decision.	1	2	3	4	5
It depends what you think would be decent behaviour.	1	2	3	4	5
It depends how would you feel about yourself if you would help or not.	1	2	3	4	5
It depends whether you believe in humanity's power.	1	2	3	4	5

2. Your classmates formed a new group on Facebook where you can talk about school stuff. Although they only invite those who they think are cool and funny. If someone does not participate in the class fun, they exclude him or her from the group. In the school corridor, you overhear a conversation about not letting one of your classmates into this group because they think it is funny to decline his join requests. What would you do?

- A) I would make recommendations who should be next excluded from the group.
- B) I would pretend that I did not hear the conversation.
- C) I would point out that this is not right.

Rate the importance of the following six reasons in your decision about helping or not helping in this situation on this scale where 1=not at all important; 5=very important.

It depends how funny the situations is.	1	2	3	4	5
It depends whether the other one needs help or not.	1	2	3	4	5
It depends whether your friends/family would approve of your decision.	1	2	3	4	5
It depends what you think would be decent behaviour.	1	2	3	4	5
It depends how would you feel about yourself if you would help or not.	1	2	3	4	5
It depends whether you believe in humanity's power.	1	2	3	4	5

3. You are part of a group chat, only the most popular and cool ones can get an invitation to this group chat. If you are excluded, you cannot get back. When you enter this group, you see that one member shared screen shots of a private conversation where the other person shared intimate things about him or herself that he/she would not like to be out for everyone to know. Although, if you would tell them not to share these private things you would be excluded from this group. What would you do?

- A) I would ask them to delete the screen shots and not to share them.
- B) I would not do anything.
- C) I would remember that I have similar screen shots and I would share these with the group.

Rate the importance of the following six reasons in your decision about helping or not helping in this situation on this scale where 1=not at all important; 5=very important.

It depends how funny the situations is.	1	2	3	4	5
It depends whether the other one needs help or not.	1	2	3	4	5
It depends whether your friends/family would approve of your decision.	1	2	3	4	5
It depends what you think would be decent behaviour.	1	2	3	4	5
It depends how would you feel about yourself if you would help or not.	1	2	3	4	5
It depends whether you believe in humanity's power.	1	2	3	4	5

4. You are in a confectionery with your friends when one of you goes to the bathroom and leaves his or her phone unlocked on the table. A friend of yours thinks that it would be a great idea to write to your other friend's crush messages, but you know that this friend would be furious about this. Although if you would stop the others they would find you a loser and a coward. What would you do?

- A) I would help to write the message.
- B) I would stop the others.
- C) I would just sit there and see how things work out.

Rate the importance of the following six reasons in your decision about helping or not helping in this situation on this scale where 1=not at all important; 5=very important.

It depends how funny the situations is.	1	2	3	4	5
It depends whether the other one needs help or not.	1	2	3	4	5
It depends whether your friends/family would approve of your decision.	1	2	3	4	5
It depends what you think would be decent behaviour.	1	2	3	4	5
It depends how would you feel about yourself if you would help or not.	1	2	3	4	5
It depends whether you believe in humanity's power.	1	2	3	4	5

Appendix 15: Short form of Difficulties in Emotion Regulation Scale (Kaufman et al., 2016)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1. almost never (0-10%)
2. sometimes (11-35%)
3. about half the time (36-65%)
4. most of the time (66-90%)
5. almost always (91-100%)

1. I pay attention to how I feel.	1	2	3	4	5
2. I have no idea how I am feeling.	1	2	3	4	5
3. I have difficulty making sense out of my feelings.	1	2	3	4	5
4. I care about what I am feelings.	1	2	3	4	5
5. I am confused about how I feel.	1	2	3	4	5
6. When I'm upset, I acknowledge my emotions.	1	2	3	4	5
7. When I'm upset, I become embarrassed for feeling that way.	1	2	3	4	5
8. When I'm upset, I have difficulty getting work done.	1	2	3	4	5
9. When I'm upset, I become out of control.	1	2	3	4	5
10. When I'm upset, I believe that I will end up feeling very depressed.	1	2	3	4	5
11. When I'm upset, I have difficulty focusing on other things.	1	2	3	4	5
12. When I'm upset, I feel guilty for feeling that way.	1	2	3	4	5
13. When I'm upset, I have difficulty concentrating.	1	2	3	4	5
14. When I'm upset, I have difficulty controlling my behavior.	1	2	3	4	5
15. When I'm upset, I believe there is nothing I can do to make myself feel better.	1	2	3	4	5
16. When I'm upset, I become irritated at myself for feeling that way.	1	2	3	4	5
17. When I'm upset, I lose control over my behavior.	1	2	3	4	5
18. When I'm upset, it takes me a long time to feel better.	1	2	3	4	5

Appendix 16: Social Desirability Scale (Stöber, 2001)

Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, check the word "true"; if not, check the word "false".

	True	False
1. I sometimes litter.	<input type="checkbox"/>	<input type="checkbox"/>
2. I always admit my mistakes openly and face the potential negative consequences.	<input type="checkbox"/>	<input type="checkbox"/>
3. In traffic I am always polite and considerate of others.	<input type="checkbox"/>	<input type="checkbox"/>
4. I have tried illegal drugs (for example, marijuana, cocaine, etc.).	<input type="checkbox"/>	<input type="checkbox"/>
5. I always accept others' opinions, even when they don't agree with my own.	<input type="checkbox"/>	<input type="checkbox"/>
6. I take out my bad moods on others now and then.	<input type="checkbox"/>	<input type="checkbox"/>
7. There has been an occasion when I took advantage of someone else.	<input type="checkbox"/>	<input type="checkbox"/>
8. In conversations I always listen attentively and let others finish their sentences.	<input type="checkbox"/>	<input type="checkbox"/>
9. I never hesitate to help someone in case of emergency.	<input type="checkbox"/>	<input type="checkbox"/>
10. When I have made a promise, I keep it--no ifs, ands or buts.	<input type="checkbox"/>	<input type="checkbox"/>
11. I occasionally speak badly of others behind their back.	<input type="checkbox"/>	<input type="checkbox"/>
12. I would never live off other people.	<input type="checkbox"/>	<input type="checkbox"/>
13. I always stay friendly and courteous with other people, even when I am stressed out.	<input type="checkbox"/>	<input type="checkbox"/>
14. During arguments I always stay objective and matter-of-fact.	<input type="checkbox"/>	<input type="checkbox"/>
15. There has been at least one occasion when I failed to return an item that I borrowed.	<input type="checkbox"/>	<input type="checkbox"/>
16. I always eat a healthy diet.	<input type="checkbox"/>	<input type="checkbox"/>
17. Sometimes I only help because I expect something in return.	<input type="checkbox"/>	<input type="checkbox"/>

LIST OF PUBLICATIONS

Publications in the topic of the dissertation

Arató N. (2015). Cyberbullying és machiavellizmus. Mi a különbség az áldozat és a zaklató között? In Böhm G. & Fedeles T. (Eds.) *Szemelvények 3: Válogatás a PTE BTK XXXII. Országos Tudományos Diákköri Konferencián I-III. Helyezést elért hallgatóinak pályaműveiből* (pp. 275-312). PTE BTK Kari Tudományos Diákköri Tanács

Arató N. (2016). Internetes zaklatás és machiavellizmus: Mi a különbség az áldozat és a zaklató között? *Impulzus – Szegedi Pszichológiai Tanulmányok*, 3, 47-79.

Arató N. & Lénárd K. (2018). Internetes zaklatás és mentalizáció: Mi jár az interneten bántalmazók fejében? In Czeferner D., Bühm G., & Fedeles T. (Eds.) *Mesterek és Tanítványok 2: Tanulmányok a bölcsészet- és társadalomtudományok területéről* (pp. 369-399.). PTE BTK Kari Tudományos Diákköri Tanács.

Arató N., Zsidó A. N., Lénárd K., & Lábadi B. (2019). Az Internetes Zaklatás Áldozat és Elkövetője Kérdőív (CVBS-HU) és az Európai Cyberbullying Intervenciós Projekt Kérdőív (ECIPQ) magyar adaptációja. *Iskolakultúra: Pedagógusok Szakmai – Tudományos Folyóirata*, 29(12), 81-110.

Arató N., Zsidó A. N., Lénárd K., & Lábadi B. (2020). Cybervictimization and Cyberbullying: The Role of Socio-Emotional Skills. *Frontiers in Psychiatry*, 11

Arató N., Zsidó A. N., Rivnyák A., Péley B., & Lábadi B. (n.d.) Risk and Protective Factors in cyberbullying: The role of family, social support and emotion regulation under review in *International Journal of Bullying Prevention*

Conference abstracts in the topic of the dissertation

Arató N., Lábadi B., & Lénárd K. (2016). Mentalizáció és cyberbullying összefüggései, prevenciós lehetőség. In Vargha A. (Ed.) *Múlt és jelen összeér: A Magyar Pszichológiai Társaság XXV. Jubileumi Országos Tudományos Nagygyűlése Kivonatkiötet* (pp. 262-263.), Magyar Pszichológiai Társaság.

Arató N., Lábadi B., & Lénárd K. (2016). Az internetes zaklatás pszichológiája In Pécs Workshop on Cognitive and Developmental Psychology (pp. 11)

Arató N., Lábadi B., & Lénárd K. (2017). Cyberbullying research: A new perspective In: *BCCCD 2017 Budapest CEU Conference on Cognitive Development* (pp. 55-56).

Arató N., Lábadi B., Lénárd K. & Zsidó A. (2017). A Cyber Victim and Bullying Scale magyarországi adaptálása In Lippai E. (Ed.) *Személyes Tár – Közös Világ: A Magyar Pszichológiai Társaság XXVI. Országos Tudományos Nagygyűlése: Kivonatkiötet* (pp. 121-122.). Magyar Pszichológiai Társaság

Arató N., Lábadi B., & Lénárd K. (2017). Cyberbullying and mentalization: What do cyberbullies think? In: *18th European Conference on Developmental Psychology: Abstract Book* (pp. 511)

Arató N., Zsidó A. N., Lábadi B., & Lénárd K. (2018). Az online bántalmazás pszichológiája: A szocio-emocionális készségek szerepe. In Lippai E. (Ed.) Változás az állandóságban: A Magyar Pszichológiai Társaság XXVII. Országos Tudományos Nagygyűlése: Kivonatkiötet (pp. 258.). Magyar Pszichológiai Társaság.

Arató N., Zsidó A. N., Lábadi B., & Lénárd K. (2018). The role of socio-emotional skills in cyberbullying On 23rd World Congress of the International Association for Child and Adolescent Psychiatry and Allied Professions 2018. 07. 23.-27. 23.

Arató N., Zsidó N. A., Lábadi B., & Lénárd K. (2018). Cybervictimization and cyberbullying: The role of social and emotional competencies. Horizons of Psychology, 27, 77.

Arató N., Zsidó N. A., Lénárd K., & Lábadi B. (2019). The role of socio-emotional competencies in cyberbullying perpetration and cybervictimization In World Anti-Bullying Forum 2019 – Abstract Book (pp. 264.).

Arató N. & Lábadi B. (2019). The Role of Family Dynamics, Social Support and Emotion Regulation in Cybervictimization and Cyberbullying Perpetration on 19th European Conference on Developmental Psychology 2019. 08. 29-09. 01.

Arató N., Zsidó A. N., & Lábadi B. (2019). Risk and Protective factors in Cyberbullying: The role of family, social support and emotion regulation on 24th Workshop on Aggression 2019. 11. 7-8.

Publications unrelated to the topic of the dissertation

Zsidó N. A., *Arató N.*, Inhof O., Janszky J., & Darnai G. (2018). Short versions of two specific phobia measures: The snake and the spider questionnaires. *Journal of Anxiety Disorders, 54*, 11-16.

Inhof O., Zsidó A., Bandi Sz., & *Arató N.* (2018). Téri, szemantikai információk és az érzelmi Valencia kongruenciájának hatása bimodális integrációra In. Bódog F., Csiszár B., Hayden Zs., Kovács O., & Rácz T. (Eds.) VII. *Interdiszciplináris Doktorandusz Konferencia 2018: Tanulmánykiötet* (pp. 114-124.). Pécsi Tudományegyetem Doktorandusz Önkormányzat.

Inhof O., *Arató N.*, Bandi Sz. A., Budai Tm., Darnai G., & Zsidó A. N. (2019). Rövidített pófóbia és kígyúfóbia kérdőív vizsgálata magyar mintán. *Psychiatria Hungarica, 34*, 11-18.

Arató N., Budai T., Inhof O., Zsidó A. N., Bandi Sz., Lábadi B., & Darnai G. (2019). Az internetes zsalatás idegrendszeri hatásai in Csiszár B., Bódog F., Mező E., & Závodi B. (Eds.) VIII. *Interdiszciplináris Doktorandusz Konferencia 2019 – Tanulmánykiötet* (pp. 39-53.). Pécsi Tudományegyetem Doktorandusz Önkormányzat.

Zsidó A. N., *Arató N.*, Láng A., Lábadi B., Stecina D., Bandi Sz. A. (2020). The connection and background mechanisms of social fears and problematic social networking site use: A Structural Equation Modeling analysis. *Psychiatry Research, 292*

Coelho, C. M., Suttiwan O., *Arató N.*, Zsidó A. N. (2020). On the nature of fear and anxiety triggered by COVID-19. *Frontiers in Psychology, 11*

Zsido, A. N., **Arato, N.**, Ihasz, V., Basler, J., Matuz-Budai, T., Inhof, O., ... & Coelho, C. M. (2021). "Finding an Emotional Face" Revisited: Differences in Own-Age Bias and the Happiness Superiority Effect in Children and Young Adults. *Frontiers in Psychology*, 12.

Zsido, A. N., Varadi-Borbas, B., & **Arato, N.** (2021). Psychometric properties of the social interaction anxiety scale and the social phobia scale in Hungarian adults and adolescents. *BMC Psychiatry*, 21(1), 1-15.

Lábadi, B., **Arató, N.**, Budai, T., Inhof, O., Stecina, D. T., Sík, A., & Zsidó, A. N. (2021). Psychological well-being and coping strategies of elderly people during the COVID-19 pandemic in Hungary. *Aging & Mental Health*, 1-8.

Zsidó A. N., **Arató N.**, Láng A., Lábadi B., Stecina D., & Bandi Sz. (2021). The role of maladaptive cognitive emotion regulation strategies and social anxiety in problematic smartphone and social media use. *Personality and Individual Differences*, 173, 110647

Conference abstracts unrelated to the topic of the dissertation

Zsidó A. N., Darnai G., Inhof O., Perlaki G., Orsi G., Nagy Sz. A., Lábadi B., Lénárd K., **Arató N.**, Kovács N. et al. (2018). A vonás impulzivitás és kéregvastagsága összefüggése eltér fiatal felnőtt internetfüggők és egészséges kontroll populációban In: Lippai E. (Ed.) *Változás az állandóságban: A Magyar Pszichológiai Társaság XXVII. Országos Tudományos Nagygyűlése: Kivonatkötet* (pp. 150.). Magyar Pszichológiai Társaság.

Zsidó A. N., Darnai G., Perlaki G., Orsi G., Inhof O., Lábadi B., Bandi Sz., **Arató N.**, Budai T., & Janszky J. (2018). Impaired inhibitory control networks in internet addiction: Independent component analysis. 7. Neuroimaging Workshop Pécs 2018. 10. 19-20.

Kopcsó K., **Arató N.**, Rivnyák A, Fábry Z., & Péley B. (2018). Associations between preschoolers' nighttime behaviour, nighttime fears, and storytelling characteristics. *Horizons of Psychology*, 27, 91.

Inhof O., Zsidó A. N., Darnai G., Perlaki G., Orsi G., Nagy Sz. A., Lábadi B., Lénárd K., **Arató N.**, Kovács N. et al. (2018). A frontális kéreg és az internetfüggőség kapcsolatának vizsgálata fiatal felnőtt populációban. In Lippai E. (Ed.) *Változás az állandóságban: A Magyar Pszichológiai Társaság XXVII. Országos Tudományos Nagygyűlése: Kivonatkötet* (pp. 151). Magyar Pszichológiai Társaság.

Darnai G., Zsidó A. N., Inhof O., Perlaki G., Orsi G., Nagy Sz. A., Lábadi B., Lénárd K., **Arató N.**, Kovács N. et al. (2018). Az agy funkcionális hálózatainak érintettsége internetfüggőségben: Stroop feladat alapú fMRI vizsgálat. In Lippai E. (Ed.) *Változás az állandóságban: A Magyar Pszichológiai Társaság XXVII. Országos Tudományos Nagygyűlése: Kivonatkötet* (pp. 149-150.). Magyar Pszichológiai Társaság.

Budai T., Lábadi B., **Arató N.**, Inhof O., Bani Sz., Zsidó N. A., Darnai G., & Lénárd K. (2018). Exploring the structural neural background of body ownership. *Horizons of Psychology*, 27, 96-97.

Arató N., Kozma L. A., Szennai M., Rivnyák A., & Láng A. (2018). A kortárs bántalmazás negatív következményei: Az online játékokban megjelenő identifikáció, toxikus és addiktív viselkedés. In Lippai E. (Ed.) *Változás az állandóságban: A Magyar Pszichológiai Társaság*

XXVII. Országos Tudományos Nagygyűlése: Kivonatkötet (pp. 215-216.). Magyar Pszichológiai Társaság.

Arató N., Darnai G., Budai T., Inhof O., Zsidó. A. N., Bandi Sz., Lábadi B., Lénárd ., Perlaki G., Orsi G. et al. (2019). Cyberbullying and Neuroimaging: A task to measure cyberbullying's neural correlates on *Tagung Experimentell Arbeitender Psychologen* 2019. 04. 15-17.

Arató N., Darnai G., Budai T., Inhof O., Zsidó. A. N., Bandi Sz., Lábadi B., Lénárd ., Perlaki G., Orsi G. et al. (2019). Cyberbullying research: A new behavioural method to measure cyberbullying In *World Anti-Bullying Forum 2019 – Abstract Book* (pp. 303.).

Lénárd K., **Arató N.**, Budai T., Siegler A., Hanó Cs., Kulcsár G., Lábadi B., Darnai G., & Zsidó An. (2019). Interactive theatre performance n Hungarian schools based on youth novel. In *World Anti-Bullying Forum 2019 – Abstract Book* (pp. 303.).

Budai T., Lábadi B., **Arató N.**, Inhof O., Bandi Sz., Zsidó A. N., Darnai G., & Lénárd K. (2019). A testi tudatosság strukturális idegrendszeri háttere In Bódog F., Csiszár B. (Eds.) *VIII. Interdiszciplináris doktorandusz Konferencia 2019: Ansztraktkötet* (pp. 77.). Pécsi Tudományegyetem Doktorandusz Önkormányzat

Budai T., **Arató N.**, Inhof O., Bandi Sz., Zsidó A. N., Lénárd K., Lábadi B., & Darnai G. (2019). Public attitude towards cyberbullying in Hungary. In *World Anti-Bullying Forum 2019 – Abstract Book* (pp. 257.).

Arató N., Budai T., Darnai G., Zsidó A. N., Bandi Sz., Inhof O., Lénárd K., Janszky J., & Lábadi B. (2019). Perception of Cyberbullies and Cyber Victims: A Public Attitude Study about Cyberbullying in Hungary on *19th European Conference on Developmental Psychology* 2019. 08. 29-09. 01.

ACKNOWLEDGEMENTS

First of all, I would like to thank my supervisors for their endless support and help during my PhD studies. I would like to thank them for involving me in several professionally useful experiences, researches and programs. I especially would like to thank Bea for making my anxious ass to write. Apart from the professional support and help, I would like to express my gratitude to them not just for being my supervisors but for being my mentors and for showing me the wonders of Tettye.

I would like to thank my partner who had to live with me during this time. It was not an easy time to write this work and he stood by me all the way and supported me with such patience for what I cannot be thankful enough.

I am also thankful for the PhD community that formed with Adrienn Rivnyák, Csilla Hankó, Tímea Matúz-Budai, Anna Siegler, Luca Kozma and Orsolya Inhof during our PhD years. It was easier to go through the challenges of the doctoral studies while having their supporting friendship and our board-game nights.

I would also like to thank András Zsidó for his help and support. Although he was not my supervisor he helped me a great deal with my publications, with statistical challenges and included me in several of his very interesting projects. I learned a lot from him and I am thankful for all his help.

At last but not least, I would like to thank the students who worked with me in the last five years: I am especially grateful for Rebeka Orbán and Noémi Gelencsér as they helped me to plan and develop my fourth study's research method. Additionally, they also helped me to gather data, as did Gabriella Molnár, Dalma Mayer, Dorottya Paku, Barbara Horváth, Flóra Pécsi, Bettina Karlik, Anita Prajda, Glória Bata, Attila Budavári, Bálint Glázer, Viktória Vadász, Ádám Tóth, Tímea Ertelt and Dávid Verpulác.

Doktori értekezés benyújtása és nyilatkozat a dolgozat eredetiségéről

Alulírott

név: Arató Nikolett

születési név: Arató Nikolett

anyja neve: Szatmári Ildikó

születési hely, idő: Tapolca, 1992. 11. 05.

The Role of Socio-Emotional Skills in Cyberbullying Engagement

című doktori értekezésemet a mai napon benyújtom a(z)

Pszichológia

Doktori Iskola

Fejlődés és Klinikai Pszichológia

Programjához

Témavezető neve: Dr. habil. Lábadi Beatrix

Egyúttal nyilatkozom, hogy jelen eljárás során benyújtott doktori értekezésemet

- korábban más doktori iskolába (sem hazai, sem külföldi egyetemen) nem nyújtottam be,

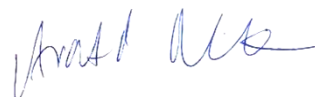
- fokozatszerzési eljárásra jelentkezésemet két éven belül nem utasították el,

- az elmúlt két esztendőben nem volt sikertelen doktori eljárásom,

- öt éven belül doktori fokozatom visszavonására nem került sor,

- értekezésem önálló munka, más szellemi alkotását sajátomként nem mutattam be, az irodalmi hivatkozások egyértelműek és teljeseek, az értekezés elkészítésénél hamis vagy hamisított adatokat nem használtam.

Dátum: Pécs, 2021. 05. 04.



.....
doktorjelölt aláírása