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Bullying victimization and mental health: risk and protective factors

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CHAPTER 1

GENERAL INTRODUCTION AND THESIS OVERVIEW

1.1. General introduction

Our childhood years will always be part of who we are. Those first years of life always remain embedded into our present and future selves even more than day-to-day experiences that we have, as we grow old. During this age, we have our first encounters with everything and everyone and our experience range from the happiest moments and hurtful moments. All of these experiences shape who you will be later on. Even if these years are meaning to be filled with significant positive experiences, too often children experience pain, neglect or violence. The negative short and long-term impact of their social, academic and psychological functioning had been widely documented. The reality that these children experience should be understood in order to help them move beyond it, and most importantly to assure that these events are being preventable. In this context, my research focus is centered around understanding better how school aged children are affected from exposure to violence in general, and bullying victimization in special, with a focus of understanding what makes them vulnerable to it and what helps them grow out of it.

The World Health Organization (WHO) states that interpersonal violence could be conceptualized as a universal challenge to which each society must find a solution (WHO, 2014, p.11). Violence is "*the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation*" (Krug, 2002, p.5). The need to start focusing on this problem is a priority for the WHO, as they argue that *considering its prevalence and impact on those involved, violence in schools can be prevented and must not be tolerated* (Peihnarea, 2006, p.12).

Looking through the evolutionary lens, examples of bullying behaviors could be encountered in nature where animals tend to engage in bullying as a strategy to assure their access to physical, social and/or sexual resources. For example, in his work Konrad Lorenz (1969) offers a clear exemplification of situations encountered in several animal species where by being aggressive towards other members of its own group, one is obtaining and maintaining a hierarchical status and access to resources. From this perspective, a central role is taken by the dominance that might seem to represent a constant in most social groups and structures. Pellegrini (2012) explains that since aggression and affiliation are related with dominance within a group, in certain conditions these aggressive behaviors could act as the optimal interaction for fostering peer affiliation. As Liu and Graves (2011) frame it, *from the ethological perspective, bullying may be viewed as innate or instinctual and may best be understood as a tool for achieving social dominance—particularly in adolescence—which may partially explain increased prevalence in middle school populations,* Liu & Graves, 2011, p. 560). To conclude, bullying could be found in all societies, from hunter-gatherer societies and ancient civilizations to nowadays (Wolke & Lereya, 2015).

Moreover, bullying behaviors could be considered highly adaptive in humans as bullies may use both prosocial and aggressive means to achieve their desired goals (Book, Volk, & Hosker, 2012). Compared to their counterparts (victims or bully-victims), adolescent bullies seem to have significantly lower levels of maladjustment during the incidents and even later in their adult life (Wolke et al., 2015). Moreover, they seem to be highly popular (de Bruyn, Cillessen, & Wissink, 2010), and their skills (theory of mind, empathy or leadership) are highly developed (Caravita, Di Blasio, & Salmivalli, 2009). They start dating earlier than their counterparts do, and they are more active in interacting with members of the opposite sex (Connolly, Pepler, Craig, & Taradash, 2000). Moreover, recent research has linked bullying behaviors with activation of certain genes. All these results might indicate that bullying behaviors could be seen as an adaptive behavior that brings a wide range of benefits to bullies. Nevertheless, when looking closely at how these behaviors are initiated and maintained and more importantly how the development and health of those involved as victims or bully-victims is affected, it becomes mandatory to intervene and stop them from re-occurring.

1.2. Bullying: conceptual delimitations

Bullying research has a long past, but a short history. Even if what today is named *bullying* had existed among people inside society for centuries, this phenomenon has been offered a scientific conceptualization only recently. Dan Olweus have introduced the term in 1972 (mobbing-Mobbing: Group Aggression against Boys and Girls). An updated version of the definition entails that ' *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.*' (Olweus, 1999, p.10).

In his recent book, Peter K. Smith (2014, p. 15) emphasizes that within the present research literature it is accepted that bullying *is an aggressive act (intent to cause harm) that is perpetrated via any of the form of aggression- physical, verbal, cyber; direct or indirect*; where *there is an imbalance of power (the victim finds it difficult to defend him-/herself)* and *it has some element of repetition* (Smith, 2014, p.15). Moreover, Smith argues that even if these characteristics (intend to harm the other, power imbalance and repetition) are seen as characteristics there are still some issues and debates within the field. For example, the research community does not universally accept the criteria of repetition and power imbalance (especially when it comes to cyberbullying), as well as the intent to cause harm. It becomes necessary to make a distinction between violence, aggression and bullying. All bullying is aggression, but not all aggression is bullying.

Moving forward, in the last decade an increasing interest has been directed towards cyberbullying. The development of technology, the availability of the newest media devices (internet, smartphones, etc.), and the popularization of social media networks have created a fertile ground for these aggressive online behaviors to occur among children and adolescents. Individuals or groups that repeatedly communicate hostile and aggressive messages intended to inflict harm or discomfort in others (Tokunaga, 2010) can define cyberbullying as any behavior performed through electronic or digital media.

1.2.1. Measurement issues

A particular aspect associated with bullying is the fact that this term does not have an equivalent word when translated in many other languages to cover its meaning fully (Smith, 2014). Bullying behaviors have been conceptualized and differ according to the researchers (Sung Hong and Espelage, 2012). For example, Smorti, Menesini, and Smith (2003) show that when comparing how *bullying* would translate into Italian, Spanish, Portuguese, and Japanese, it becomes evident that some non-English speaking countries do not have a single word which encompasses the total meaning of this word. The same thing is true when one tries to translate bullying in Romanian (Cosma & Baban, 2013). Even in English speaking countries, victimization has been widely used when discussing about bullying (Smith, 2014). On the other hand, as international studies emphasize there is a tendency in English speaking countries for the bullying involvement trend (as bully or victims) to be lower than in the non-speaking English countries (Molcho et al., 2009, Chester et al., 2015). This could be attributed to the wide spread of the word within media, school context, day-to-day interactions, and children have developed a higher tolerance towards this behavior. In addition, recent research indicates that children when faced with the word bullying, youths might perceive it differently than the researchers do (or would intend them to) (Land, 2003; Vaillancourt et al., 2008).

One important conclusion from the decades of research is that bullying involvement is not defined by static and fixed roles for those involved (Espelage, 2011). In addition, children who find themselves in this bully-victim continuum seem to have more mental health problems and social difficulties than children who are not directly involved in these behaviors.

1.3. Short and long term effects associated with bullying victimization involvement

Puberty and adolescence is characterized by rapid changes (at physical, social and cognitive level) which increase the pressure that the individuals have to cope with. During this development period, approximately 10% of children and adolescents experience emotional and behavioral problems that are serious enough to require professional attention (Kauffman 2004).

Short term effects of bullying victimization

The last decades of research on bullying converge to the conclusion that involvement in these behaviors implies adverse consequences for a large proportion of those directly involved. The next section will focus on presenting the short and long-term consequences for the individuals who were bullied during childhood.

A consistent amount of studies conclude that children and adolescents who were bullied have been found to have higher risk for experiencing psychosomatic problems such as headache, sleeping difficulties, stomach ache, backache, tiredness and dizziness (McLaughlin, Hatzenbuehler, & Hilt, 2009). Moreover, exposure to bullying episodes had been related with acute short-term internalizing problems and distress like chronic worrying, nightmares and decreased well-being (Arseneault et al., 2010).

Long-term consequences into adulthood

Recent studies indicate that Victims of frequent bullying had higher rates of depression (OR=1.95, 95% CI=1.27-2.99), anxiety disorders (OR=1.65, 95% CI=1.25-2.18), and suicide attempts (OR=2.21, 95% CI=1.47-3.31) than their nonvictimized peers (Takizawa, Maughan,

Arseneault, 2014). Moreover, according to the same study, individuals who have been exposed to childhood bullying victimization were experiencing at age 50 a lack of social relationships, economic hardship, and poor perceived quality of life.

Of particular interest for the research community is often be the bully-victim group. Consistent research suggests that all participants in the bully-victim continuum, regardless of their role (victim, bully, or bully-victim) have higher chance to experience symptoms of depression than their non-involved counterparts (Austin & Joseph, 1996). When analyzing who is experiencing the worst outcome, bully-victim participants appear to have higher levels of depression (Haynie et al., 2001; Swearer et al., 2001), with the effects being visible even in adulthood (Wolke & Copland 2013).

1.4. Theoretical frameworks

1.4.1. Ecological Framework

The ecological framework proposed by Urie Bronfenbrenner (1977) is part of the larger class of socioecological models developed for providing a better understanding of the dynamic interrelations among various personal and environmental factors.

As a starting point, we offer a short overview of the main factors analyzed so far (according to Smith, 2014, p.104): *individual level* (genetics, temperament and personality); *family level* (nature of parent-child and sibling relationships); *peer group level* (nature and quality of friendships, socio-metric status); *school level* (school climate and quality of teacher and pupil relationships); *community level* (neighborhood levels of violence and safety, socioeconomic conditions); *society level* (portrayals of violence, bullying and abuse of power in the mass media, economic inequality).

1.4.2. Resilience Framework

Considering that not all victims exposed to bullying incidents experience negative consequences (e.g. Sapouna & Wolke, 2013), and that a large number of victims show positive development despite their exposure to bullying (Ttofi, Bowes, Farrington, Lösel, 2014), the resilience framework could offer a good conceptual starting point when analyzing this process. One definition states that resilience refers to a *dynamic process encompassing positive adaptation within the context of significant adversity* (Luthar, Cicchetti, Becker, 2000, p. 543), where two critical conditions have to be met: exposure to significant treat or severe adversity and achievement of positive adaptation despite major assaults of the developmental process (Luthar, Cicchetti, Becker, 2000). Exposure to bullying victimization could be considered an adversity with which a large number of children have to cope with during their school years (Rigby, 2000).

An important question that remains to be answered by the research literature is if the protective factors are the reverse side of risk factors. Following Ttofi et al. (2014) conclusions, our premises are that the interplay between these factors is dynamic and they do not interact and evolve in a linear manner. The authors frame it: '*In order to distinguish between risk and promotive factors, it is important to investigate relations with outcome measures (e.g., delinquency) in different ranges of the predictor variable*.' (Ttofi et al., 2014, p. 9). Moreover, it becomes imperative to analyze the specific characteristics of these interaction effects.

1.4.3. Other local theory

Stress buffering model

Stress-buffering model (Cohen and Wills, 1985) emphasizes that the perception of a strong social support network may attenuate the adverse effects of negative life events. According to the authors, social support can sometimes prevent peer victimization from occurring, directly affecting mental health within the context of peer victimization, or buffering (moderate) the effects of peer victimization during and after its occurrence. The stress-buffering model suggests differential effects of social support, depending on the level of stress experienced; it has a moderating influence indicated by an interaction effect (Tanigawa et al., 2011).

The Public Health Approach to Bullying

The magnitude of youth violence, and especially school bullying, directed the attention and interest of the main stakeholders in finding the best ways to prevent it. On the core of this approach stands the conviction that violence can be prevented (Mercy, Rosenberg, Powell, Broome, Roper, 1993).

1.5. Current status on the field

Even if exposure to bullying during childhood as described earlier imposes a significant risk of experiencing adjustment problems, not all individuals involved in these behaviors are faced with these negative outcomes. Many young people show positive development despite being exposed to bullying (McVie, 2013). In their review, Ttofi and collegues (2014) conclude that factors such as good school performance, good social skills, stable family environment, feelings of attachment towards parents and prosocial friends act as factors that interrupt the continuity from bullying involvement and later maladjustment problems. Moreover, Sapouna and Wolke (2013) argue that factors such as being male, having high self-esteem, experiencing low levels of conflict with parents and no exposure to victimization from a sibling act as protective factors against developing depression in a two years interval. The current focus within the field is to go beyond understanding these protective factors that favor a resilient development despite the exposure to risk for maladjustment and to understand the mechanisms that support the variation between individuals' response to bullying victimization.

1.6. Aims and approach of the present thesis

To summarize the main findings presented in the previous pages, we can argue that during school years involvement in bullying behaviors always occur along a continuum that ranges from not being involved in these incidents, witnessing these events to being a victim, a bully or a bully-victim and the dynamics observed when analyzing these behaviors are not characterized by fixed roles (Swearer, Collins, Haye Radliff, Wang, 2011).

As previously discussed, recent theoretical and empirical findings argue for a more structured and coherent approach when analyzing the correlates of bullying involvement. Thus, the present research follows a combination **of theory-driven and data-driven approach** based on large data sets with the aim of understanding the role played by the risk and protective factors in the relationship between bullying victimization and mental health problems.

Bullying prevalence across countries and regions seem to vary according, as well as the socio-demographic determinants of bullying involvement that seem to entail mixed findings (AERA, 2013). Moreover, even if in most of the European countries, a specific interest directed towards analyzing and understanding the specific cultural particularities of this behavior, within the Romanian context only recently specific investigations have been implemented (e.g. Cosma & Baban, 2013; Cosma, Balazsi & Baban, 2015). In this context, the first aim of this thesis **is to investigate the evolution of bullying involvement among Romanian school aged children from 2006 to 2014** (**Study 1**). More specifically, we aim to identify the prevalence of bullying involvement (as bully, victim, or bully victim) among Romanian school aged children. Secondly, we aim to investigate the overall trend for bullying involvement among Romanian school aged children according to HBSC data from 2006, 2010, and 2014 (for bully, victims, and bully-victims). Thirdly, we aim to identify how gender, age, and socio-economic status are associated with bullying involvement prevalence across a 10-year period (from 2006 to 2014).

Second, we aim **to identify specific protective factors that interplay in the relationship between bullying victimization by looking at social support and the use of cognitive emotion regulation strategies to change this relationship**. This challenging aim persists across Chapter 3, where we try to identify the specific protective role played by several dimensions of social support in the relationship between bullying victimization and mental health problems in adolescence. (**Study 2A**.), and to investigate the role played by specific cognitive emotional regulation in the relationship between bullying victimization and mental health problems in adolescence. (**Study 2B.**).

A third aim is **to investigate the longitudinal relationship between bullying victimization and internalizing problem**s (**Study 2C.)** using a cross-lagged approach based on a 3 wave measurement.

In Chapter 4, we **explore the associations of traditional and cyberbullying victimization with mental health problems among Romanian school aged children** (**Study 3.**). More specifically, we aim to identify the degree of overlap between traditional bullying victimization and cybervictimization. Moreover, considering the inconsistent gender pattern revealed by the present research literature (Vieno et al., 2014, Callaghar et al., 2014), another aim of this specific investigation is to identify the specific gender pattern for cyberbullying victimization.

Considering that the negative long term consequences of exposure to bullying victimization can be visible during adulthood, the fifth main aim of the present research inquiry is to investigate if the exposure to a positive family context buffers the effect of victimization on adult's mental and somatic health (**Study 4.**), which will be largely presented in **Chapter 5.**

The theoretical and practical conclusions and implications of the research presented in this thesis are discussed in **Chapter 6**.

CHAPTER 2

STUDY 1. TRENDS IN BULLYING INVOLVEMENT AMONG ROMANIAN SCHOOL AGED CHILDREN FROM 2006-2014

2.1. Introduction

School violence represents a social worldwide problem (Clarke and Kiselica, 1997). Even though, school as an institution should foster the positive development of the young individuals, there are cases when negative events take place in this environment. Among the behaviors associated with school violence, in the last four decades a central interest from the research community and media has been directed towards analyzing bullying behaviors (Cosma& Baban, 2013). Bullying involvement is defined as, '*a student is being bullied or victimized when he or she is exposed repeatedly and over time to negative action on the part of one or more other students*'(Olweus,1999, p. 10). Asymmetry of power, repetition and intention to harm the other had been identified to be the key features that distinguish bullying behaviors from other violent acts (Olweus, 1993). It is not bullying when there is a conflict between two persons of the same physical or mental strength (Smith et al., 1999).

The extent of the problem had been well charted and disseminated in different countries and societies. Several national and international surveys offer the opportunity to understand the magnitude, the correlates, and consequences of this social problem. One of these surveys is represented by the Health Behavior in School-Aged Children (HBSC- a WHO collaborative study), that uses a common methodology in order to get information regarding school aged children health behaviors. The HBSC standard questionnaire assesses several dimensions of child and adolescent life, from relations with family, friends, school, family's socio-economic status, life satisfaction, physical activity, positive health, to sexual behaviors and sexual activity, alcohol and drug consumption, and so on. Among the health behaviors investigated, an important interest is directed towards school violence, and especially, school bullying (Cosma & Baban, 2013). According to the latest international report (Currie et al., 2012) the cross-national profile of bullying and victimization among school aged children from countries included in 2009/ 2010 survey were analyzed. According to HBSC 2010 survey results, for bullying others the results across the countries surveyed a significant increase between 11 to 15 years old for both genders, with a peak only in some countries for 13 old students (e.g. Romania, Slovakia, Estonia). For being bullied, a systematic decrease was observed, as children grow older in most countries (Curie et al., 2012). Their results state that there is a variation within exposure to bullying other, with estimates ranging from 8.6 % to 45.2% among boys, and from 4.8 % to 35.8 % among girls. On the other hand, the average rates of being bullied across the study varies from 9.8% of the 15 years old boys and 7.3% of the 15 years old girls to 14.3% of the 11 years old boys and 11.4% of the 11 years old girls. On the other hand, the average estimates within the countries for being bullied averaged from 2.8% to 31.9% for boys and from 1.7% to 27.1% for girls. The highest rates of bullying and victimization were reported by children from Baltic countries (Lithuania,

Latvia), and the lowest rates were reported by children from Nordic countries. Globally, boys reported significant higher rates of bullying involvement in all countries. Moreover, investigating the trends of victimization among 33 countries included in the international study, Chester et al., (2015) indicate that there is an overall decreasing trend for occasional bullying victimization across several countries 33.5% in 2001/2 to 29.2% in 2009/10, and from 12.7% in 2001/02 to 11.3% in 2009/10 for chronic bullying victimization. This trend evolution, and especially the negative slope, could be attributable to development of national policies that tackle specifically school bullying, the development and implementation of whole school evidence based prevention and intervention programs (Molcho et al., 2009, Chester et al., 2015).

Compared to the situation in other countries, only recently bullying behaviors among Romanian school aged children have started to be investigated in a structured manner (Cosma & Baban, 2013; Cosma, Balazsi & Baban, 2015). International surveys such as HBSC or EU-Kid offer a general cross-cultural overview of the prevalence of these behaviors in different time frames (Currie et al., 2011, Levingstone & Haddon, 2009). Romania is one of the countries with the highest rates of students' involvement in bullying episodes in Europe (Currie et al., 2012). From a public health and evidence based intervention perspective, it is thus important to study the changes in engagement in these behaviors in order to offer a better understanding of the phenomenon and to offer the basic fundament for the development future preventive strategies. This study aims to identify the prevalence of bullying involvement (as bully, victim, or bully victim) among Romanian school aged children. Secondly, we aim to investigate the overall trend for bullying involvement among Romanian school aged children according to HBSC data from 2006, 2010, and 2014 (for bully, victims, and bully-victims). Thirdly, we aim to identify how gender, age, and socio-economic status are associated with bullying involvement across 10 years period (from 2006 to 2014).

2.2. Methodology

The analysis is based on data from the Romanian part of the 'Health Behaviour in School-Aged Children (HBSC): A WHO Collaborative Cross-national Study'. The aim of the HBSC study is to describe young people's health and health behavior and to analyze how these outcomes are related to the social context where they live. Cross-sectional surveys of 11-, 13- and 15-year-old adolescents are carried out every four years in a growing number of countries based on an internationally agreed protocol. The latest survey, in 2013/14, included a total of 45 countries from Europe and North America. Romania is member of HBSC Network since 2005. So far, in Romania three surveys cycles had been undertaken. The data is part of the Romanian HBSC survey data 2006-2014 (years of data collection: 2006, 2010, 2014). All three surveys used identical protocols considering the characteristics of the target group, the sampling method, and data collection protocol. In each of the three surveys, the included sample was representative for the students enrolled in Romanian pre-university school system for the age categories included and it was based on systematic cluster sampling (schools), stratified by administrative district (judet) and type of school (high school -învatământ liceal- and or elementary school-şcoală generală-). The numbers of sampled schools were 109 in 2006, 153 in 2010 and 150 in 2015. The existing international HBSC research protocol states that only 11, 13 and 15-year old students are to be included in the study. Data collection took place in springtime of each year. The study was totally anonymous and thus it was not possible to conduct an individual non-response

analysis. Age and sex distributions of participants were similar across the three surveys. A parental passive informed consent, an active consent from students and schools were used in all three surveys. The study received the ethical approval from the Ethical Commission from the Babes Bolyai University, Cluj Napoca, Romania.

Data collection was based on using a standardized questionnaire within the HBSC network. The questionnaire was translated from English to Romanian by two experts. In the next step, the questionnaire was back translated to English by different translators. This version was sent to an expert, English native speaker within the HBSC network, who revised the back translation. All the differences were identified and resolved. The final version which was used represents the version after all the feedback from the international English native speaker were integrated. A standard core of items had been used in each survey cycle in order to facilitate the analysis of trends for several behavioral dimensions. Trained research assistants and field operators administrated the questionnaires in the classrooms during school program. A standard administration procedure was used across all three surveys. The students were assured of the confidentiality of the information they provide and were also informed that they could withdraw from the study anytime during the completion of the questionnaire. After completion, students were asked to put the questionnaire in an envelope and hand it in to the research assistant/field operator present.

2.2.1. Participants

A total of 14068 students were included in the final sample (47.5% boys and 52.5% girls) with an age range from 11 to 15 years old. The basic socio-demographic characteristics of the sample are included in Table 2.1.

2.2.2. Instruments

Bullying Behaviors. Questions about bullying experiences were derived from Olweus Bully/Victim Questionnaire and were preceded by the following introduction*: Here are some questions about bullying. We say a student is BEING BULLIED when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn't like. But it is NOT BULLYING when two students of about the same strength quarrel or fight.* Involvement in bullying episodes as perpetrator was assessed by one question that asked respondents to report the frequency with which they bullied others in school and away from school in the last 2 months. Similarly, being bullied was assessed by one question were respondents had to report the frequency with which they were bullied in school and away from school in the last 2 months. Response categories offered for both questions were (1) "I haven't . . . ,"; (2) "once or twice,"; (3) "two or three times in the last week,"; (4)"about once a week," and (5) "several times a week". In agreement with the recommendations of the questionnaire developer on prevalence estimation, the 5-point questions were dichotomized so that responses 1 and 2 were 0 (not bullied/ haven't been bullying others) and responses 3 to 5 were scored as 1 (bullied/ been bullying others) (Due et al., 2009). Moreover, a bully-victim category was formed by the students who have answered that they have been bullied and had been bullying others more than 2 or 3 times in the last week.

Individual wealth was measured using the HBSC Family Affluence Scale. The FAS was comprised of four items: ‘‘Does your family have a car or a van’’ (0 no, 1 yes, one; 2 two or more), ‘‘Do you have your own bedroom for yourself?’’ (0 no, 1 yes), ‘‘During the past 12 months, how many times did you travel away on holiday (vacation) with your family?’’ (0 not at all, 1 once, 2 twice, 3 more than twice), and, ‘‘How many computers does your family own?’’ (0 none, 1 one, 2 two, 3 more than two). Added together, these items produced a score that ranged from 0 (lowest affluence) to 7 (highest affluence) (Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009). In the next phase, we created a categorical variable, where FAS was re-coded as it follows: low affluence=0–2, medium affluence =3–4, and high affluence=5–7 (Due et al., 2009).

2.2.3. Data analysis procedure

In the first phase, categorical dummy variables were computed according to the international cut-off points. In order to investigate the evolution of bullying involvement for Romanian school aged children, Time trends for the involvement in bullying behaviors as bully, victim or bully-victim were estimated by using binary logistic regression models. We included in the model the survey year (2006, 2010, 2014) as a categorical dummy variable, with the survey from 2006 as a referent category. The descriptive and trends analysis was done separately for both genders. The results are presented as Odds Ratio and 95% confidence intervals. For the second objective of the present study, six binary logistic models were computed. For each outcome (being bullied, being bully and being a bully-victim), the first regression analysis model investigated the role played by the socio-demographic variables in the total variance of the outcome (Model 1, 3, 6). In the second step (Model 2, 4, 6) survey year was included as predictor. All analyses were done by using IBM-SPSS, version 20.

2.3. Results

Table 2 presents the prevalence of being bullied, bullying others and bully-victim by gender and the three survey years. Overall, there has been an increase in prevalence from 2006 to 2010 for all three categories of behavior. The increase was significant only for the bully others and bully victim category. From 2010 to 2014 it was registered a significant decrease. The overall trend indicates a significant decrease for all three-group categories from 2006 to 2010. When analyzing the prevalence by gender, a constant gender difference emerged. Across all behaviors and survey years, boys reported significantly higher rates on involvement than girls ($p<.05$). Specific for each gender, for all behaviors the overall trend from 2006 to 2014 has significantly decreased, even if a significant increase emerged for both genders for bullying others and bully-victim category from 2006 to 2010.

Table 2.1. Basic characteristic of the samples included in the study (N=14068)

Survey Year	2006				2010				2014			
	Boys		Girls		Boys		Girls		Boys		Girls	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	2135	(45.6%)	2549	(54.4%)	2671	(49.4%)	2733	(50.6%)	1880	(48.2%)	2100	(51.6%)
Age												
11 years old	855	(52.2%)	784	(47.8%)	801	(49.3%)	823	(50.7%)	611	(48.5%)	648	(51.5%)
13 years old	674	(46.8%)	766	(53.2%)	800	(46.3%)	926	(53.7%)	621	(50.1%)	619	(49.9)
15 years old	606	(37.8%)	999	(66.2%)	1046	(52.2%)	956	(47.8%)	633	(43.9%)	809	(56.1%)
FAS												

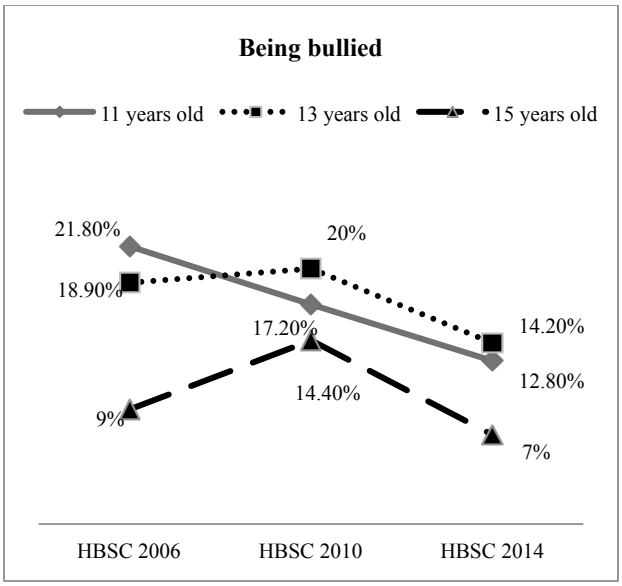
Low	815	(40.6%)	1190	(48.3%)	900	(36.8%)	1123	(43.3%)	572	(33.1%)	799	(40.1%)
Medium	883	(44%)	1014	(41.2%)	1015	(41.5%)	1036	(39.9%)	793	(45.9%)	824	(41.4%)
High	310	(15.4%)	260	(10.6%)	532	(21.7%)	435	(16.8%)	392	(21%)	368	(18.5%)

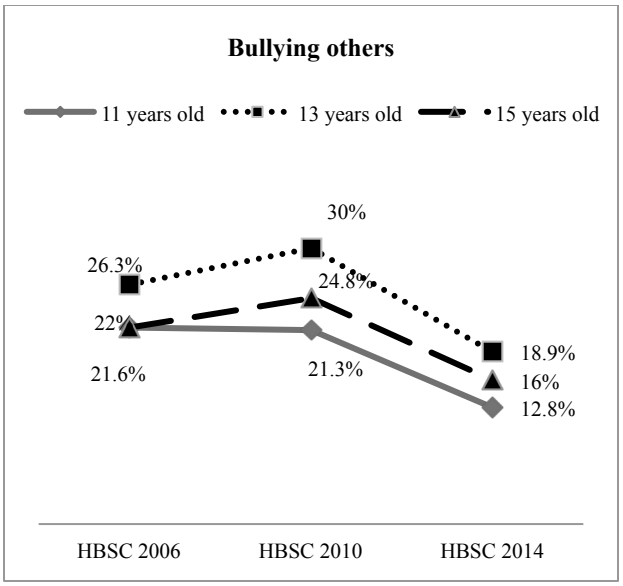
Table 2.2. Trends in bullying involvement from 2006 to 2014 by gender and survey year, prevalence (%), odds ratio (OR) and 95% confidence[a]

	Survey year	Total		Boys*		Girl*	
		%	OR (95%CI)	%	OR (95%CI)	%	OR (95%CI)
Being Bullied	**2006**	16.5%	*(Ref.)*	20.2%	*(Ref.)*	13.4%	*(Ref.)*
	2010	17%	1.05[b] (.94-1.17)	19.6%	1[b] (.87- 1.16)	14.6%	1.1 (.94-1.28)
	2014	11.5%	.65 (.57-.73)	14.3%	.66 (56-79)	8.9%	.62 (.51-.75)
Bully others	**2006**	23%	*(Ref.)*	28.3%	*(Ref.)*	18.8%	*(Ref.)*
	2010	25.6%	1.11 (1.01-1.22)	30.5%	1.09 (.96-1.24)	20.9%	1.13 (.99-1.3)
	2014	16%	.612 (.54-.68)	21.3%	.67 (.58-.78)	11.2%	.53 (.44- .62)
Bully/ victim	**2006**	7.9%	*(Ref.)*	10.3%	*(Ref.)*	5.9%	*(Ref.)*
	2010	8.9%	1.14 (.99-1.32)	11%	1.09 (.96- 1.24)	6.8%	1.16 (.93-1.45)
	2014	5.1%	.618 (.51-.74)	7.2%	.67 (.58-.78)	3.3%	.52 (.39-.70)

a: Logistic regression models adjusted for age. The OR's in the column total are adjusted for age and sex, [b]ns, *-significant gender difference for all prevalence reported (boys significantly reported higher involvement rates than girls).

Figure 1 presents the prevalence for each measured outcome for all three-age categories. With the exception of being bullied and bully-victim category in 2006 where 11 years old reported the highest prevalence, in rest it were the 13 years old across all behaviors and survey years reported the highest rates of involvement. Moreover, the overall decreasing trend is evident when we investigate the evolution of behavior for each age category. For being bullied and bully-victim status, the rates of involvement reported by the 15 years old participants are lower than the ones reported by the 11 years old (14.4% and 3.2% vs. 17.2% and 6.3%) in the same survey cycle. For students who bully other students, the involvement rate reported by the 15 years old is higher than the one reported by the 11 years old in all three surveys (e.g. 24.8% vs. 21.6% in 2010 or 16% vs. 12.8% in 2014). Considering the specific roles (bully, victim or bully-victim), the highest prevalence across the three surveys was reported by the bullies. On the other hand, in 2010 more than one out of 10 from the 13 years old students indicated that they have been simultaneously being bullied and bullying others (12%).





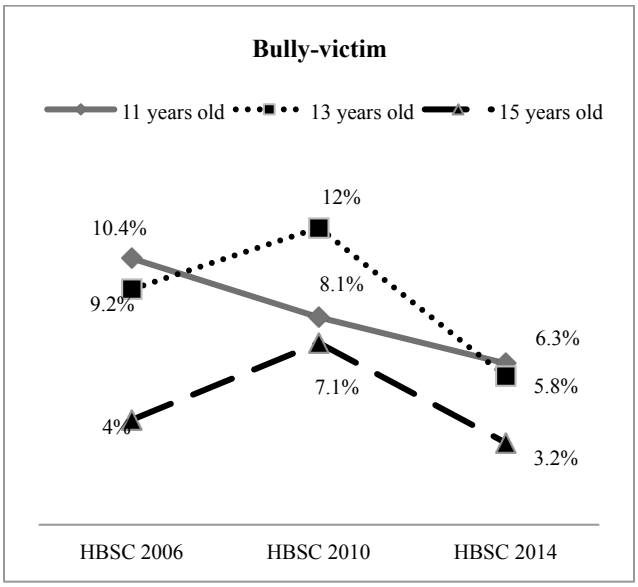


Figure 1a. Prevalence for bullying involvement as victim for age categories across surveys

Figure 1b. Prevalence for bullying involvement as bully for age categories across surveys

Figure 1c. Prevalence for bullying involvement as and bully-victim for age categories across surveys

Table 2.3. illustrates the prediction models for being bullied, being bully or being a bully-victim by socio-demographic characteristics. Analyzing the predictors for being bullied (Model 1), having 13 years old increased with 1.03 the odds of being a victim (OR=1.03, 95% CI=.92-1.15) compared to the 11 years old. The 15 years old students category had with 0.57 decreased odds for experiencing victimization (OR=.57, 95% CI=.50-.64). Moreover, being a girl and having medium and high family affluence were associated with a decrease of odds of being bullied, with odds ranging from 0.62 to 0.70. When adding the survey year into the model (Model 2), the explained variance increases from 0.031 to 0.039. The odds ratio coefficient indicates that compared to 2006, the prevalence of victimization significantly decreased with 0.66 (OR=0.66, 95% CI=.58-.76).

Model 3 illustrates the significant predictors for bullying others category. Specifically, having a higher age category increased the odds for being a bully (OR=1.49, 95% CI=1.34-1.66 for 13 years old and OR=1.17, 95% CI=1.06-1.31 for 15 years old), as well as having a high family affluence (OR=1.16, 95% CI=1.03-1.31). On the other hand, being a girl decreased with .56 the chance for bullying others (OR=.56, 95% CI=.51-.61). When adding the survey year into the model, the explained variance increases from 0.029 to 0.044 (Model 4). The odds ratio coefficient indicates that compared to 2006, the prevalence of victimization significantly decreased with 0.59 (OR=0.66, 95% CI=.58-.76).

The prediction model for bully-victim role shares many similarities with the model for being bullied (Model 5). The overall model explains 0.041 of variance for being a bully-victim (Model 6).

Table 2.3. Prediction models for bullying involvement (as bully, victim, and bully victim) by sociodemografic predictors and survey year

	Being bullied		**Bullying others**		**Bully-Victim**	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
11 years old	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*
13 years old	1.03**	1.03**	1.49**	1.51**	1.1	1.1
15 years old	.57**	.57**	1.18**	1.18*	.57**	.58**
Boys	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*
Girls	.62**	.62**	.56**	.56**	.52**	.52**
FAS low	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*	*(Ref.)*
FAS medium	.78**	.78**	.93	.95	.60**	.71**
FAS high	.72**	.72**	1.16*	1.2*	.82*	.83*
HBSC 2006		*(Ref.)*	*(Ref.)*	*(Ref.)*		*(Ref.)*
HBSC 2010		1.05		1.09		1.13
HBSC 2014		.66**		.59**		.63**
Negelkerke R^2	.031	.039	.029	.044	.033	.041

* < 0.05 ** < 0.001

2.4. Discussions

The present study aimed to identify the prevalence of bullying involvement among Romanian school aged children across three measurements (2006, 2010, and 2014). Moreover, we aimed to analyze the overall trend from 2006 to 2014 for bullying others, being bullied and being bully-victim, and to investigate the role played by the socio-demographic in the prevalence of investigated behaviors. Overall, bullying involvement prevalence (as victim, bully, and bully-victim) has decreased among Romanian school aged children from 2006 to 2014, but a significant increase from 2006 to 2010 was observed. Considering the international HBSC data as a comparison point, in 2006 and 2010 the Romanian school aged children had reported higher prevalence than the HBSC average (Curie et al., 2008, Curie et al., 2012).

Even if the international literatures reports an overall decreasing trend form the entrance to secondary school as children move into adolescence (Rigby, 2002), the trend observed for Romanian school aged children seems to be different. The peak for bullying involvement is reached around the age of 13 years old. For either being a victim or being a bully, students who are 13 years old have significantly higher probability of being victim or bully and this trend

remains constant across all three surveys (2006, 2010, 2014). Since the study did not measure if the bully was in the same class as the victim, it could be that older children could bully younger children. Smith, Madesen, and Moody, (1999) in their quest to explain why bullying victimization has a downward trend through ages 8-16 years old found that younger children were most often bullied by older children in their school and that they still have not acquired the social assertiveness skills to deal efficiently with bullying incidents. On the other hand, peer nomination data do not necessarily support such a clear downward trend for bullying victimization (Salmivalli, 2002).

The present trends analysis suggests that overall, from 2006 to 2014; the prevalence of bullying behaviors in Romanian schools has significantly declined. . Even if the decreased trend could be seen as a positive societal and cultural outcome, the rates reported by the school children remain still incredibly high. For example, more than one in 10 students said they had been bullying other students more than two times in the past couple of months, with one in five boys reporting the same outcome. Having in mind the characteristics of Romanian school system and the evolution of the involvement in bullying behaviors among the school aged children, it becomes a necessity the development of evidence based bullying reduction school programs. These programs should be based on studies that take into account the latest results from fundamental and epidemiologic research, but also incorporate specific social and cultural aspects.

CHAPTER 3

Study 2. A. BULLYING VICTIMIZATION AND MENTAL HEALTH PROBLEMS IN SCHOOL AGED CHILDREN: THE ROLE OF FAMILY, SCHOOL AND PEER SOCIAL SUPPORT

I.3.1. Introduction

Bullying behaviors represent a widespread social problem among schoolchildren worldwide, and especially among Romanian schoolchildren (Currie et al., 2012; Cosma & Baban, 2013). Also, the associations between involvement in these types of behaviors and mental and somatic health problems it is well documented (Arseneault, Bowes, & Shakoor, 2010; Ttofi, Farrington, Lösel, & Loeber, 2011b). Considering these facts, there is still a gap in the research literature sustained by the need to determine which mechanisms (as moderator or mediators) could interplay in this relationship.

Bullying victimization and internalizing problems

Bullying victimization is documented to have strong short and long-term negative consequences for the victimized children. Mental health problems reported by school children such as depression, anxiety and low self-esteem (Fekkes, Pijpers & Verloove-Vanhorick, 2004, Hawker & Boulton, 2000; Baldry, 2004; Craig, 1998), loneliness, lack of concentration, and fear of going to school were found to be more frequent among victimized than nonvictimized children (Gini & Pozzoli, 2009; Hawker & Boulton, 2000; Juvonen et al., 2003; Kaltiala-Heino et al., 2000). A consistent number of studies revealed that there is a strong gender effect when it comes to experience depression and internalizing problems for those who were bullied or victimized. Their conclusions indicate that victimized girls tend to experience more frequent the aforementioned problems (Baldry, 2004; Hawker & Boulton, 2000; Kaltiala-Heino et al., 2000; Roland, 2002).

Bullying victimization and social support

Social support could be defined as a multidimensional construct that encompasses physical and instrumental assistance, attitude transmission, resource and information sharing, and emotional and psychological support (Lopez & Salas, 2006). More specifically, social support could be seen as the instrumental, informational and/or emotional assistance provided by significant others (House & Kahn, 1985). There is a wide support for the finding that the perception about the availability of support has a stronger influence on mental health and individual functioning than the actual receipt of social support (Dunkel-Schetter & Bennett, 1990). Social support has been linked to resilience and positive development for children who had gone through adversities (Dumont & Provost, 1999).

Social support from parents

Parents could be considered the first significant source of social support for children, and the ones who have an important role in their children's ability to cope with adversity (Tanigawa et

al., 2011). High levels of perceived social support from parents have been negative associated with depressive symptoms (Holt & Espelage, 2005; Malacki, 2000, Stadler et al., 2010; Tanigawa, Furlong, J., Felix, & Sharkey, 2011; Bilsky et al. 2013) and peer victimization (Baldry & Farrington, 2005; Delfabbro et al., 2006). Parental support in the context of peer victimization appears to benefit boys and girls in similar ways (Tanigawa et al., 2011, Flouri & Buchanan, 2002; Stadler et al., 2010).

Social support from teachers

Teachers are an important source of social support throughout children's school years (Tanigawa et al., 2011). The support received from teachers had been associated with school success (Domagala-Zysk, 2006), less psychosomatic symptoms (Torsheim & Wold, 2001) and depressive symptoms (Colarossi & Eccles, 2003). Victimized children tend to report lower levels of support from their teachers (Furlong, Chung, Bates, & Morrison, 1995), with some studies suggesting different buffering effects for boys and girls against mental health problems (Davidson & Demaray, 2007).

Social support from peers

Peer social support could be conceptualized as the support received by a child from close friends as well as classmates (Tanigawa et al., 2011). In childhood and adolescence, the experience of low levels of social support has been associated with negative school outcomes (Domagala-Zysk, 2006; DuBois et al., 1992) and with overall maladjustment (Davidson & Demaray, 2007). Several studies support the buffering effect of peer social support between peer victimization and depressive symptoms (Cooley, Fite, Rubens, Tunno, 2014; Papafratzeskakou et al. 2011).

Considering the aforementioned arguments, the present study aims to explore the role played by the perceived social support between peer victimization and internalizing problems. Specifically, the first aim of this study was to investigate the frequency of bullying victimization in female and male adolescents and its associations with mental health problems. We expected that bullying victimization would be associated with high levels of internalizing problems. Secondly, we aimed to investigate the protective role played by perceived social support in the relationship between bullying victimization and internalizing problems. In addition, we expected that the participants across gender and age would benefit differently from the social support received from parents, friends, classmates and teachers.

I.3.2. Methodology

The methodology for the data collection of the present study it is similar with the one used in the first study. The sample included it is based on the Romanian HBSC 2014 Survey sample. Data collection was based on using the standardized questionnaire within the HBSC network for the HBSC 2014 Survey.

I.3.2.1. Participants

The characteristics of the sample are presented in Table 2.3. For this particular study, only the sample included in the HBSC 2014 Romania Survey was included (N=3980, 48.2% boys and 51.8% girls). The age range of the participants was 11 to 15 years old (M=13.22, SD=1.67).

I.3.2.2. Instruments

Peer Victimization. Questions about bullying experiences and peer victimization were derived from Olweus Bully/Victim Questionnaire and were preceded by the following introduction*: Here are some questions about bullying. We say a student is BEING BULLIED when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn't like. But it is NOT BULLYING when two students of about the same strength quarrel or fight.* Being bullied was assessed by one question were respondents had to report the frequency with which they were bullied in school and away from school in the last 2 months. Response categories offered for both questions were (1) "I haven't . . . ,"; (2) "once or twice,"; (3) "two or three times in the last week,"; (4)"about once a week," and (5) "several times a week". In agreement with the recommendations of the questionnaire developer on prevalence estimation, the 5-point questions were dichotomized so that responses 1 and 2 were 0 (not bullied) and responses 3 to 5 were scored as 1 (bullied) (Due et al., 2009). In the next phase, children were offered a list with 7 types of different types of bullying to which they could have been exposed to: name calling; left out of activities; pushed/hit; rumors spread; bullied because of race and religion, and sexual bullying. The response categories offer were the same as for the general bullying victimization item. For the study, we operated with a measurement of peer bullying victimization as a latent construct by adding up the scores for the 7 specific victimization items. The new scale had a good internal reliability (α= .75).

Mental Health Problems. Strengths and Difficulties Questionnaire (SDQ), a 25-item behavioral screening questionnaire for 4- to 16-year-olds, was used for assessing emotional and behavioral problems (Goodman, 1997). Several studies have been shown that it is a good instrument for screening mental health problems in children and adolescence, similar with the CBCL (Achenbach, 1991). Respondents were asked to rate the occurrence of various psychopathology symptoms within the last six months on three points scale (0 = not true, 1 = somewhat true, and 2 = certainly true). The answers are coded according to five scales: prosocial behavior, hyperactivity and attention problems, emotional problems, conduct problems and problems with peers. Items assessing emotional problems and problems with peers were added up to generate a total score for internalizing problems (10 items). A total score for mental health problems was computed by adding together the hyperactivity and attention problems, emotional problems, conduct problems and problems with peers' scales (20 items). The scales used in this study had satisfying internal consistencies (Emotional Problems Scale: α= .69, Internalizing Problems Scale: α= .65 and, Total Mental Health Problems: α= .77).

Perceived Social Support. ***Parental and friend perceived social support*** was measured with Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet & Farley, 1988). Parental and peer support scales consist each of 4 items [Example of items for the parental Support Subscale ('I get the emotional help and support I need from my family'; 'I can talk about my problems with my family') and for Friend Perceived Social Support ('I can count on my friends when things go wrong'; 'I can talk about my problems with my friends')], with response option ranging from 1 (very strongly disagree) to 7 (very strongly agree). The overall score for each subscale was calculated by adding the four items together. Several studies confirmed the reliability and validity of the scale, especially for the 'Friend Subscale' and 'Family Subscale' (e.g. Canty-Mitchell & Zimmet, 2000;Cheng & Chan, 2004). For this study,

the internal consistencies for two subscales had good indices (Parental Support**:** α= .91, and Friend Support: α= .87).

Teacher and classmate perceived social support were measured with two scales used in the HBSC Survey. Each subscale had three items and the response categories ranged from 1 (strongly agree) to 5 (strongly disagree) [example of items for the Student Support Subscale ('Other students accept me as I am.'; 'Most of the students in my class(es) are kind and helpful.') and Teacher Support Scale ('I feel that my teachers accept me as I am.';' I feel that my teachers care about me as a person.')]. Several validation studies indicate the good psychometric properties of these scales (Torsheim, Wold & Samdal, 2000; Torsheim et al., 2010). In this study, the scales had satisfying internal consistencies (Teacher Support: α= .84, Internalizing Problems Scale: α= .76).

Socio-demographic variables: Besides FAS Scale, children were asked to provide information regarding the persons to whom they live (mother, father, step-mother, step-father, foster care, etc) and also information related with their parents occupational status (weather they have a job or not, and if affirmative, what kind of job do they have).

I.3.2.3. Data analysis procedure

Students were divided in three age groups, according to the International HBSC Study Protocol: 11, 13, and 15 years old. In the first step, the frequency of bullying peer victimization was calculated, and weather engagement in these particular bullying episodes as victims differ between the two genders (independent *t* test). Next, Pearson correlation coefficients between the variables included in the study (peer victimization, mental health problems, parental support, friend support, classmate support and teacher support) were calculated separated for each gender. In order to investigate how parental, peer, and school support could protect adolescents exposed to peer-victimization against developing mental health problems (internalizing problems), two separate hierarchical regression analyses were performed with z-standardized variables. In the first set of regression, the dependent variable, level of internalizing problems, was regressed on four blocks of independent variables. In the first block, peer victimization was included. In the second block, all proposed moderators were included. In the third block, moderating interaction factors were created: victimization x parental support, victimization x friend support, victimization x classmate support, victimization x teacher support, as well as exploratory gender interactions. In the fourth block, three way interaction factors were included: victimization x parental support x gender, victimization x friend support x gender, victimization x classmate support x gender, victimization x teacher support x gender.

The procedure for the second multiple hierarchical regression was identical, but instead of gender, age was introduced as a moderator in order o investigate the role of several facets of social support in the context of different age groups.

I.3.3. Results

Descriptive statistics:

Overall, the participants were living together with their mothers (93%) and with their father (83.6%), and for 67.4% of the sample mothers had a job, whereas for 79.3% fathers had a job.

Overall, 11.5% of the students indicated that they had been involved as victims in bullying episodes more than 2-3 times in the past couple of months (Table 3.1.). A significant gender difference emerged, boys reporting significantly higher prevalence compared to girls (14.3% for boys vs. 8.9% for girls) (t= 5.34, p=000). When analyzing specific types of victimization, constant gender differences emerged. Boys reported significantly higher prevalence compared to girls for name calling, hitting, comments related to race or skin color, religion, and sexual bullying (p<.05). On the other hand, girls reported significantly higher levels for being left out and for rumors spreading (p<.05).

Table 3.1. Bully victimization characteristics of participants (N=3890)

Bully victimization	**Mean and standard deviation per item (score range 1-5)**	**Percentage that was bullied two or three times per month or more**
	M (SD)	**(%)**
Bullied by being called mean names	1.61 (1.03)*	11.1%
Bullied by exclusion	1.35 (.84)*	7%
Bullied by hitting, kicking etc	1.28 (.72)*	5%
Bullied by lies/false rumors being told	1.45 (.90)*	8.8%
Bullied by comments about race/color	1.16 (.62)*	2.4%
Bullied by comments about religion	1.11 (.50)*	3.1%
Bullied by sexual comments	1.16 (.59)*	2%
Number/percentage that was bullied two or three times per month or more by means of one or more of the above		11.5%*[a]
Mean and Standard deviation of Bully victimization total score (7-35)	9.04 (3.48)	

* gender differences (p<.001); [a] - overall, boys reported significantly higher prevalence than girls.

Correlations between the study variables, separately for boys and girls, are presented in Table 3.2. For both genders, a significant positive associations emerged between bullying victimization and internalizing problems (r=.35 for boys and r=.36 for girls) and mental health problems in general (r=.32 for boys and r=.33 for girls). For both genders, exposure to victimization and internalizing problems were negatively associated with perceived social support from parents and friends, and positively associated with perceived social support from classmates and teachers (p<.001).

Table 3.2. Correlations among the measured variables for boys (italic and bold) and girls (below diagonal) (N=3980)

	1.	2.	3.	4.	5.	6.	7.
1. Peer victimization	-	***.35****	***.32****	***-.17****	***-.15****	***.21****	***.13****
2. Internalizing problems	.36**	-	***.87****	***-.21****	***-.20****	***.17****	***.08****
3. Mental health problems	.33**	.87**	-	***-.17****	***-.23****	***.16****	***.18****
4. Support friends	-.15**	-.24**	-.19**	-	***.46****	***-.27****	***.08****
5. Support parents	-.11**	-.19**	-.26**	.34**	-	***-.08****	***-.10****
6. Support classmates	.22**	.27**	.28**	-.17**	-.16**	-	***.37****
7. Support teachers	.07**	.19**	.29**	-.06**	-.22*	.41**	-

** p<.001

Dimensions of Perceived Social as moderators

The first multiple hierarchical regression analysis investigated the moderating effects of parental, friend, classmate and teacher support by gender on the relationship between bullying victimization and internalizing problems (Table 4).

Table 1. Prediction model for internalizing problems (victimization by social support by gender)

		Internalizing problems		
		B	**SE B**	**β**
Victimization	Block 1	1.23	.05	.33**
Gender	Block 2	.60	.05	.169**
Parental support		-.34	.06	-.09**
Friend support		-.44	.06	-.12*
Classmate support		.36	.06	.10**
Teacher support		.18	.05	.05*
Victimization by gender	Block 3	.03	.05	.01
Victimization by parental support		-.007	.05	-.002
Victimization by friend support		.003	.05	-.002
Victimization by classmate support		.003	.04	.001
Victimization by teacher support		.03	.05	.001
Victimization by parental support by gender	Block 4	-.04	.05	-.01
Victimization by friend support by gender		.02	.05	.007
Victimization by classmate support by gender		.09	.04	**.03***
Victimization by teacher support by gender		-.07	.05	-.02
Model		**F (20, 3890)= 47.81 (p=000)**		
Explained variance (R^2)		**R^2 = .207**		

R^2 =.11 for first step (p<.001); ΔR^2 =.08 for second step (p<.001); ΔR^2 =.007 for third step (p<.001); ***:p<.001; *:p<.05; [a] – controlled for age.

Figure 3.1. presents the three way interaction effects, computed after the indications offered by Dawson (2014). Boys and girls who are being exposed to bullying victimization benefit differently from social support.

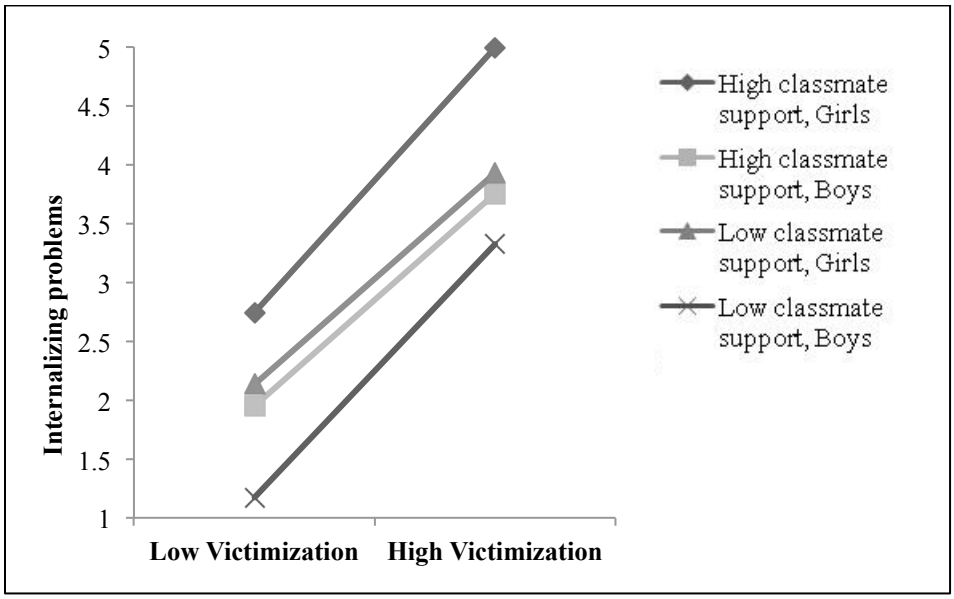


Figure 3.1. Moderation effect by classmate support and gender

In order to examine whether the mental health outcome for victimized students differ not only by gender, but also in relation to age, a second multiple hierarchical regression was conducted (table 5).

Table 2. Prediction model for internalizing problems (victimization by social support by age)

		Internalizing problems		
		B	**SE B**	**β**
Victimization	Block 1	1.2	.05	.34
Age	Block 2	-.02	.05	-.006
Parental support		-.34	.06	-.09**
Friend support		-.43	.06	-.11**
Classmate support		.36	.06	.10**
Teacher support		.19	.06	.05**
Victimization by age	Block 3	.02	.06	.005
Victimization by parental support		.003	.05	.001
Victimization by friend support		.01	.05	.001
Victimization by classmate support		.008	.04	.005
Victimization by teacher support		.004	.05	003
Victimization by parental support by age	Block 4	-.171	.05	**-.05***
Victimization by friend support by age		.284	.06	**.07****
Victimization by classmate support by age		-.08	.05	-.02
Victimization by teacher support by age		.10	.05	.03
Model		**F (20, 3890)= 47.73 (p< .000)**		
Explained variance (R^2)		**R^2 = .203**		

R^2 =.14 for first step (p<.001); ΔR^2 =.05 for second step (p<.001); ΔR^2 =.002 for third step (p<.001); ***:p<.001; *:p<.05; [a] – controlled for gender.

Figure 3.2. presents the interaction effect victimization x parental support x age on internalizing problems. In this case, for both genders, high levels of parental support were associated with lower levels of internalizing problems.

Figure 3.2. Moderation effect by parental support and age

I.3.4. Discussions and Conclusions

In this study, we assessed the frequency and the effects of bullying victimization on mental health problems, and especially internalizing problems, in a representative adolescent's sample. Specifically, we investigated for bullied children which dimensions of social support are protective for experiencing internalizing problems. Moreover, we investigated if age and gender moderate these interactions.

Several studies before had found for victimized children a buffering effect of parental social support against depressive symptoms (Stadler et al., 2010; Tanigawa, Furlong, J., Felix, & Sharkey, 2011; Bilsky et al. 2013). Even if we expected to find a moderation effect by parental support, the protective effect came only when taking into account gender as an interactive factor. Our results come in the same direction with Stadler et al., (2010), where parental support was protective against maladjustment especially for younger adolescent girls.

The moderation effect victimization by classmate support comes in opposition with the results reported by Averdijk et al., (2014), but when we added gender to this interaction, we found that classmate support is not necessary a protective factor against the experience of internalizing problems, but being more of an enhancing factor. Girls reported higher levels of social support similar with the results obtained by Demaray and Malecki (2002). These results could come in line with studies that indicate that high levels of peer social support predicted increased depressive symptoms six years later (Desjardins and Leadbeater 2011). Moreover, other studies have demonstrated that seeking social support is associated with increases in anxiety, loneliness or depression symptoms (Visconti and Troop-Gordon, 2010; Holt and Espelage 200).

Even if we expected that social support from peers will act as a moderator in the relationship between victimization and internalizing problems, and that this relationship will differ according to gender and age, the results did not fully supported our hypothesis. This comes in line with other studies, where even if peer social support buffered the associations between relational

victimization and depressive symptoms, these moderating effects of peer social support did not differ according to gender (Cooley et al., 2014).

Overall, we did not find any protective potential of the relationships with teachers, even if other studies support this relationship (Averdijk et al., 2014). In our study, social support from teacher was significant positive predictor only for experiencing internalizing problems, when controlling for victimization.

This study has several implications for public policies, especially since starting with 2007 and with an update from 2015, Romanian laws against school violence had been recognized as a major problem (ref). These results promote the idea, that prevention efforts, either as standardized bullying prevention programs or as internal school regulation, should take into account the social support dimension. The access to several social support networks, either at family or school level, could act as a buffer in the development of mental health problems. Victimized students could be assisted and learned how to properly use these networks. Moreover, according to Smith et al., (2004) victims who seek support from family or friends when confronted with bullying have higher chance to not be bullied again in the future in comparison to those who do not.

Study 2.B. THE ROLE OF COGNITIVE EMOTION REGULATION STRATEGIES IN THE RELATIONSHIP BETWEEN BULLYING VICTIMIZATION AND INTERNALIZING PROBLEMS IN SCHOOL AGED CHILDREN

II.3.1.Introduction

As presented in the previous chapters and studies, school bullying has been widely recognized as one the most serious interpersonal problems in youth's lives with extensive and long lasting negative consequences for a large part from those directly involved.

In the recent years, a large interest has been directed towards understanding which factors could act as buffers in the association between being victimized and maladaptive functioning. One direction investigates which individual factors could protect individuals exposed to stress for developing maladaptive psychological outcomes.

Bullying victimization, cognitive coping and internalizing symptoms

A particular interest in the past decades has been directed towards understanding how particular cognitive strategies employed by the individual when faced with stressful events may influence psychological well-being. Dysfunctional coping and emotional regulation had been largely associated with mental health problems. Emotional cognitive coping can be defined as the cognitive modality used by and individual of managing emotional arousing stimuli (Compas, Connor-Smith, Saltzman, Thomsen & Wadsworth, 2001; Garnefski, Kraaij & Spinhoven, 2001). As Gross (2007) defines emotional cognitive coping as not the same process as emotion regulation or mood regulation, with its main focus on decreasing negative effect in response to stressful situations. Several studies have brought evidence that cognitive emotional coping could act as a mediator and moderator of the associations between experiencing strong stressful events and psychological well-being or malfunctioning (Compas et al., 2001; Connor-Smith & Compas, 2002).

Recent studies have changed the focus from analyzing external buffering factors of victimization on maladaptive functioning to analyzing internal buffering factors, especially coping strategies or emotion regulation (Garnefski & Kraaji, 2014; Hampel, Manhal, and Hayer, 2009). In this context, the theoretical framework and methodology proposed by Garnefski, Kraaij, and Spinhoven (2001) has been chosen to replicate and expand previous research on the role of cognitive emotional coping in the relationship between in victimization and mental health problems. These authors defined cognitive coping or cognitive emotion regulation strategies as the conscious, mental strategies individuals use to handle the intake of emotionally arousing information (Garnefski et al., 2001; Thompson, 1991). Analyzing the specific role played by the cognitive emotion regulation strategies in the relationship between bullying victimization and depression and anxiety, Garnefsky and Kraaij's study (2014) revealed that rumination served as an enhancer for depression symptoms in bullied children, whereas strategies like rumination and catastrophizing acted as enhancers for anxiety symptoms. The use of positive refocusing had a protective effect for experiencing depressive symptoms, and positive reappraisal had a protective effect for experiencing anxiety symptoms.

The present study is an extension of the Garnefsky and Kraaj's (2014). The general aim of this study is to determine the relationship between bullying victimization, the use of cognitive emotion regulation strategies and symptoms of anxiety and depression. The first specific hypothesis was that, when controlling for previous bully victimization, the use of functional cognitive emotion regulation strategies will be negatively associated with depressive and anxiety symptoms, whereas the use of dysfunctional cognitive emotion regulation strategies will be negatively associated with depressive and anxiety symptoms. The second hypothesis, specific cognitive emotion regulation strategies will moderate the relationship between bullying victimization and depressive and anxiety symptoms. The third hypothesis stated that the moderation effect would be different according to gender and age. More specifically, we expected to find differences in how bullied children employ cognitive emotion regulation by age due to development of more sophisticated and efficient ways of coping with stressful life events, like bullying victimization.

II.3.2.Methodology

II.3.2.1.Participants

The study was conducted with 321 school aged children (52% boys and 48% girls) recruited from two schools, one elementary school from Cluj Napoca (85.4% from participants), the other one from a rural area school from Marca, Salaj county, Romania (14.6% from participants). Age ranged from 10 to 15 years, with an average of 12.67 years old (SD = 1.15).

II.3.2.2.Instruments

Victimization and Bullying Scale. Bullying and victimization were measured with the Romanian version of the original bullying questionnaire developed by Olweus (1993). The questionnaire had distinct questions for being bullied or for bullying others. For each item, students had to indicate whether someone had behaved towards them in those specific ways described in the questionnaire. The answer options ranged from never 'never' (coded as '0'), 'once or twice' (1), 'sometimes' (2), 'about once a week' (3) or 'several times a week' (4) in the previous couple of months. The same procedure was used to measure bullying others, operationalized with six different types of behaviors. For the purpose of the present study, six new scores were then computed (undertaken a similar procedure as Baldry, 2004). 'Overall bullying' was obtained by adding together the six different items measuring the six types of direct and indirect bullying, plus the item measuring the overall victimization (alpha Cronbach = .70).

Youth Self Report. The Romanian version of the Youth Self Report was used to measure the behavioral and emotional functioning of adolescents (Dobrean, 2009). YSR is a standardized screening scale used to identify emotional and behavioral problems in children and adolescents and it is part of the original CBCL Scale for 11–18–year-old youths (Child Behavioral Check List, Youth Self-report for ages 11–18, Achenbach, 1991). For the purpose of the current study, we used the 112 items of YSR that measure six subscales symptoms: somatic complaints, anxiety, depression, ADHD, ODD, conduct problems (alpha Cronbach= .939). Each item is scored 0, 1, or 2 in response to 'not-true', 'somewhat true', or 'certainly true', currently or in the previous six months. A total score is computed for each sub-dimension by summing up items in that subscale; higher values indicate more problems. From this scale, for the purpose of this study we used the ***Internalizing Problems Subscale.*** Internalizing behavior was measured with the 31 items subscale of the YSR. The internalizing scale consists of three dimensions:

withdrawn behaviors, somatic complaints, and anxiety/depression. A final dimension was computed by adding together the scores to these dimensions.

The Cognitive Emotion Regulation Questionnaire – children version (CERQ-k). CERQ measures cognitive strategies of emotion regulation that adolescents use in response to stressful life events. The questionnaire has 36 self-rated items, measured on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always) and organized into the following subscales: self-blame, other-blame, rumination, catastrophizing, putting into perspective, positive refocusing, positive reappraisal, acceptance and planning (Garnefski & Kraaij, 2007) (alpha Cronbach= .861). Individual subscale scores are obtained by summing up the scores belonging to the particular subscale or cognitive coping strategy (ranging from 4 to 20).

Child and Adolescent Social Support Scale (Malecki et. al, 2001) is multidimensional measurement of perceived social support, which assesses social support from five different sources: parents, teachers, classmates, close friends and school. Students rate how frequent they receive support from these persons (from 1 to 6), and how important it is for them to receive support from them (1 to 3). For the purpose of this study, only the perceived frequency of social support from friends and close friend support had been included in the analysis as control variable.

II.3.2.3. Data analysis procedure

In the first phase, descriptive statistics for the variables included in the study were computed. In order to have a better overview of the prevalence and intensity of the bullying victimization, we computed two different scores for bullying involvement: a total victimization score and a dichotomized score respecting Olweus (1993) prescriptions. In the next, phases for the entire set of analyses we decided to use the continuous variable represented by the total victimization score. Subsequently, we run several correlation analysis between the background information variables (gender, age, number of friends) and the outcome variable (the score of depression and anxiety scales) to decide whether these variables are to be included as control variables in the subsequent regression models. Next, Pearson correlations were computed to determine the associations between the predictor, outcome and proposed moderators variables. Finally to investigate whether the relationship between bullying victimization and depressive and anxiety symptoms are moderated by specific cognitive emotional regulation strategies, two multiple hierarchical regressions with z-standardized predictor variables were conducted. Depressive and anxiety symptoms were the outcome variables. Predictor variables were added in four steps. In the first step, control variables were included. In the second step, the main predictor- victimization total score- was included. In the third step were included the nine strategies. Due to multicoliniarity between positive refocusing and positive reappraisal, only positive reappraisal was automatically excluded by the software. In the last step, the interaction effects between total bully victimization and cognitive emotion regulation strategies were included. In addition, we conducted another set of regression analysis to investigate whether the moderation effect was moderated by age and gender. All analysis was conducted with IBM-SPSS 20. software package for Windows.

II.3.3.Results

Descriptive statistics:

An examination of the bullying prevalence in the present sample indicates that these behaviors are widespread. Table 2 summarizes the indicated prevalence according to general victimization and bullying involvement, and the most prevalent four different types of specific behaviors.

Table 3 Prevalence (in percentages) of different types of bullying and victimization overall and according to gender

	All	Boys	Girls	χ^2 (1)
General victimization	16%	21.9%	10.7%	16.12*
Called names	15.9%	18.7%	14.1%	ns
Left out from activities	8.5%	9.4%	14.1%	ns
Physical victimization	8.5%	12.5%	4.7%	ns
Lies & rumors spreading	10%	12.5%	7.4%	ns
General bullying others	9%	13.4%	4.7%	15.98*
Name calling	6.6%	10.8%	2.7%	ns
Leaving other out from activities	2.8%	5.7%	0	ns
Physical bullying others	5%	10.2%	2.5%	34.12**
Spread lies and rumors	2.3%	2.5	0	ns

Notes. Comparisons are for boys and girls. *p <.05, **p <.01

Table 7 displays the associations among the main variables included in the study. There is a positive significant associations among being a bully and experiencing depressive symptoms (r=.27, p<.01), as well as anxiety symptoms (r=.22, p<.01). Being a victim during bullying episodes was also positively associated with using catastrophizing (r=.15, p<.01) and other blaming (r=.23a, p<.01) as cognitive emotion regulation strategies.

Table 4. Intercorrelations of overall bullying and victimization, moderator variables and internalizing problems (N=321, *p <.05, **p <.01)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1.Overall victimization	1												
2. Depression	.27**	1											
3. Anxiety	.22**	.63**	1										
4.Internalizing problems	.33**	.88**	78**	1									
5. Acceptance	-.02	.31*	.19*	.28*	1								
6.Positive refocusing	-.07	-.06	-.02	-.03	.23*	1							
7.Refocus on planning	-.07	.06	-.05	.06	.54*	.52*	1						
8.Putting into perspective	.05	.14**	.10	.17**	.46**	.36**	.45**	1					

9.Positive reappraisal	.05	.14**	.10	.16**	.46*	.36*	.46*	1	1				
10. Rumination	.03	.32**	.21*	.28*	.56*	.28*	.39*	.36*	.35*	1			
11. Self-Blame	.00	.31**	.24*	.31*	.82	.11*	.47*	.33*	.32*	.55*	1		
12.Catastrophizing	.15**	.33**	.27*	.34*	.44*	.19*	.33*	.38*	.38*	.60*	.52*	1	
13. Other blame	.23**	.07	.07	1.07	.08	.13*	.14*	.28*	.28*	.16*	.06	.31*	1

In the next phase, multiple regression analysis was conducted with depressive symptoms as outcome variable (Table 8.). First, the control variables were included. The first block explained 12% of the total variance of depressive symptoms. The total victimization was a positive significant predictor for experiencing depressive symptoms (β=.21, p<. 01). From the nine cognitive emotion regulation strategies included, only acceptance (β=.22, p<. 01) and catastrophizing (β=.14, p<. 01) were significant positive predictors. Overall, this blocked increased with 15% the total variance explained by the model. In the last block, the interactions victimization by each emotion regulation strategies were included. Only positive refocusing was a significant moderator. Using ModGraph (Jose, 2013), we plotted the significant interaction effect. For participants who used frequently positive focusing as a general cognitive emotion regulation strategy when confronted with extremely negative situations, this strategy acted as a buffer against depressive symptoms no matter their bullying victimization status. On the other, for participants who used less frequent this cognitive emotion regulation strategy and they were highly victimized, the level of depressive symptoms was higher. The simple slop test analysis indicated that all slops were different from 0 (<.05).

Table 5. Multiple regression analysis on depression and anxiety problems, with interaction terms

		Depressive problems[a]			**Anxiety problems[b]**		
	Block 1	**B**	**SE B**	**β**	**B**	**SE B**	**β**
Age		.22	.17	**.07***	.15	.09	.08
Gender		.01	.03	.02			
School liking		-.39	.23	**-.09***	-.07	.01	-.03
No. close friends		-.63	.21	**-.16***	-.15	.11	-.07
Parental support		-.98	.23	**-.26****	-.32	.13	**-.16***
Close friend support		.20	.05	**.38***	.03	.12	.01
Victimization	**Block 2**	.80	.20	**.21****	.38	.11	**.19****
Acceptance	**Block 3**	.83	.34	**.22***	-.02	.20	-.01
Positive refocusing		-.34	.22	-.09	-.02	.13	-.01
Refocus on planning		-.12	.25	-.03	-.04	.14	-.02
Positive reappraisal		.06	.22	.01	.02	.13	-.01
Rumination		.38	.25	.10	.04	.14	.02
Self-Blame		.13	.34	.01	.33	.20	.17
Catastrophizing		.52	.24	**.14***	.32	.14	**.16***
Other blame		-.30	.19	-.08	-.12	.11	-.06
Victimization by Positive	**Block 4**	-.53	.26	**-.15***	-.45	.15	**-.24****

Refocusing			
Victimization by Rumination	-.32	.14	**-.16***
Victimization by Catastrophizing	.49	.12	**.31*****
Victimization by Other blame	-.25	.12	**-.17***
Model	F(23, 321)=6.88, p=.000	F(23, 321)=4.30, p=.000	
Explained variance (R^2)	R^2=.30	R^2=.25	

[a]- R2 =.14 for first step (p<.001); ΔR^2 =.04for second step (p<.001); ΔR^2 =.15 for third step (p<.001);
[b]- R2 =.05 for first step (p<.001); ΔR^2 =.07 for second step (p<.001); ΔR^2 =.12 for third step (p<.001);
***:p<.001; **:p<.01; *:p<.05;

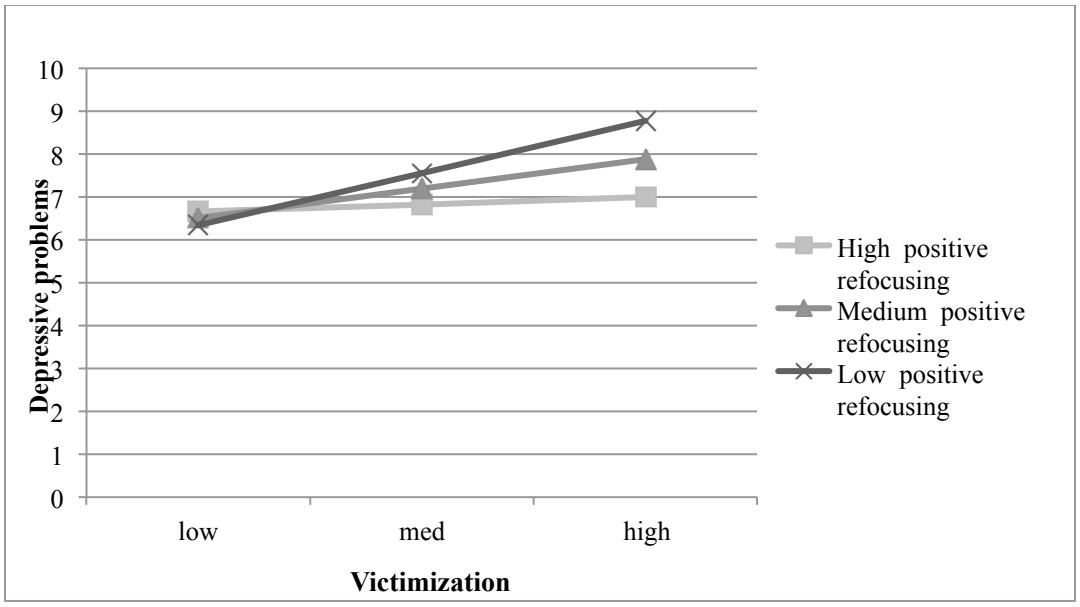


Figure 2. Moderation effect victimization by positive refocusing for depressive problems

The second multiple regression analysis was conducted with anxiety symptoms as outcome variable (Table 8.). The first block explained only 5% of the total variance of anxiety problems from the variables included. Only perceived frequency of parental support was a negative significant predictor. When controlling for variables included in the first block, total victimization score was significant predictor (β=.19, p<. 01) for experiencing anxiety problems. In the third block, only the use of catastrophizing as a cognitive emotion regulation strategy was a positive significant predictor (β=.16, p<. 01). All the variables included in this block, increased with 12% the total variance explained by the model. In the last block, four cognitive emotion regulation strategies moderated the relationship between bullying victimization and anxiety problems: positive refocusing, rumination, catastrophizing, and other blame.

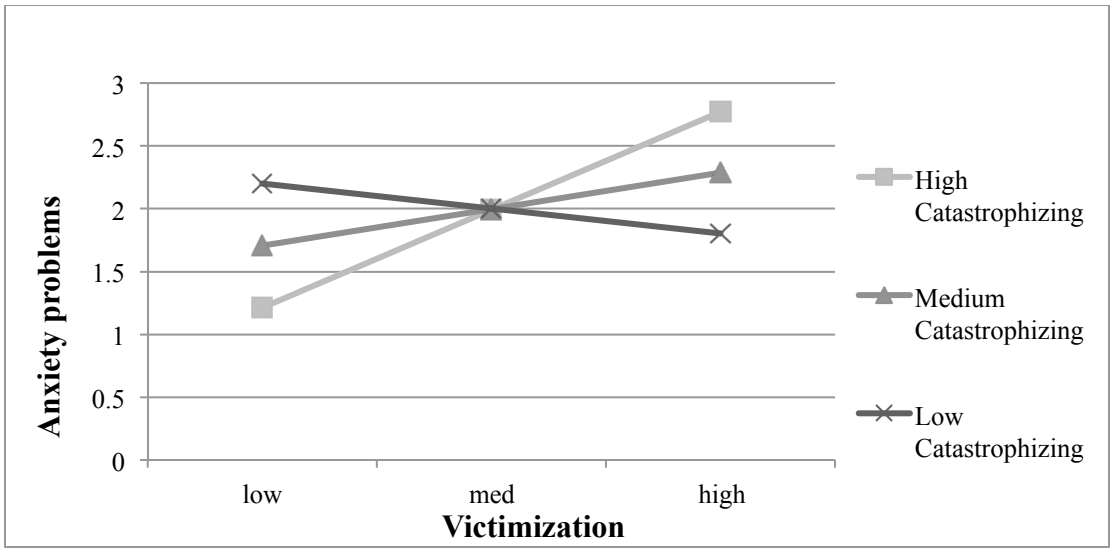


Figure 3. Moderation victimization by catastrophizing

II.3.4.Discussions and Conclusions

The present study focused on analyzing the role of cognitive emotion regulation strategies as moderators in the relationship between bullying victimization and depressive/anxiety symptoms. The first finding consolidates previous results that support the positive association between victimization experienced during bullying victimization episodes and depressive/ anxiety symptoms. On top of this direct effect of victimization, specific cognitive emotion regulation strategies added significant variance in explaining depressive anxiety problems. Significant predictors were only acceptance and catastrophizing for depressive problems and catastrophizing for anxiety symptoms. Previous studies indicate that emotion regulation characterized by strategies as catastrophizing, rumination or self-blame place individuals (adults or adolescents) at risk for experiencing emotional problems (Garnefski et al., 2001, 2006).

Furthermore, this study offers new evidence about the moderation role played by cognitive emotion regulation strategies in the relationship between bullying victimization and depressive and anxiety problems. Considering previous studies identified rumination as a moderator in the relationship between bullying victimization and depressive problems (Garnefski and Kraij, 2014), in the present study this relationship was not found. Only positive refocusing emerged as a significant moderator. Children who do not use this strategy are more prone to experience depressive symptoms. On the other hand, four cognitive emotion regulation strategies moderated the relationship between bullying victimization and anxiety problems. The use of catastrophizing strengthened the effect of victimization on anxiety, whereas positive refocusing reduced the effect of victimization on anxiety.

Combined with the results reported in Garnefski and Kraiij (2014), these results might have several practical implications. First, the assessment of maladaptive/dysfunctional cognitive emotion regulation strategies might help to identify adolescents who are at risk of developing depression or anxiety (Garnefski, Koopman, Kraaij, and ten Cate, 2009; Garnefski & Kraiij, 2014). This approach would be best pliable in a rational emotional behavior therapy framework (REBT) for screening and conceptualizing emotional problems for adolescents (Ellis & Bernard, 2006). On top of this, the present results offer a starting point to build targeted interventions for

children who have a history of victimization. Consistent with the present results, these interventions should include a section where the general individual cognitive emotional coping is assessed (especially, catastrophizing, rumination or other blaming), and further intervention steps could be based on strategies through which this maladaptive individual coping would be challenged and they would be thought adaptive strategies that could be used when faced with stressful situations, and especially with bullying victimization. As explained by Banks and Zionts, (2009) it is important that during REBT interventions children and adolescents learn the difference between the thinking that leads to goal attainment and the thinking that is interfering with achieving their goals in the classrooms.

Study 2. C. BULLYING VICTIMIZATION AND INTERNALIZING PROBLEMS IN SCHOOL AGED CHILDREN: A LONGITUDINAL APPROACH

III.3.1.Introduction

Bullying behaviors among schoolchildren represents a problem world wild not only due to their increased prevalence, but and also for their negative impact on the health and development of those directly involved as bully or as victims. The basic definition of bullying converges to the systematic abuse of power inflected by an individual toward another individual or group that is characterized by power imbalance, intention to harm and repetition (e.g. Olweus, 1993, Smith, 2014, etc).

Relationship between victimization and internalization

A large number of studies have focused on the relationship between victimization and internalizing problems. Using a cross-sectional approach, several studies indicate that being a victim of bullying is associated with higher chances for experiencing depression and anxiety (Fekkes, Pijpers, Verloove-Vanhorick, 2004; Hawker, Boulton, 2000), suicidal ideations (Barker, Arseneault, Brendgen, Fontaine, & Maughan, 2008), psycho-somatic complaints (Gini & Pozzoli, 2009, 2013) or academic problems (Nakamoto, Schwartz, 2010). Moreover, in some studies, significant gender differences were observed in terms of associations between bullying victimization and internalizing problems (e.g. Fekkes, Pijpers, Fredriks, Vogels, Verloove-Vanhorick, 2005, Kaltiala-Heino, Rimpela, Rantanen, Rimpela, 2000), whereas others indicate no such differences (Fekkeset al., 2004). Besides experiencing a wide range of somatic and health problems concurrent with the victimization episodes, victims of bullying episodes experience a wide range a psychosomatic problem later in adulthood (Copland, Wolke, Angold, Costello, 2013; Takizawa, Maughan, Arseneault, 2014). The worse long term outcomes are being evidenced for victims and bully-victims (Wolke, Copeland, Angold, Costello, 2013).

When analyzing this association using a longitudinal perspective, most of these studies focus on analyzing how victimization is a precursor for consequent and later internalizing problems (Gladstone, Parker, Malhi, 2006; Kochel, Ladd, Rudolph, 2012). For example, in a longitudinal study which aimed to investigate the relationship between peer victimization in childhood and internalizing problems in adolescence, Zwierzynska, Wolke and Lereya (2013) indicate that the victims of bullying episodes had higher chances for presenting emotional and depression symptoms in the severe range (>90th percentile) two years later. The analysis was controlled for prior psychopathology, family adversity, gender and IQ, and the results were independent of who reported the bullying episodes (parents, teachers or the children themselves). Biebl et al., (2011) indicate that being chronically victimized during childhood is significantly more associated with mental and health problems in adolescence than for non-victims. The effect was stronger for girls. Moreover, in their systematic review, Ttofi, Farrington, Lösel, and Loeber (2011) point that the odds of experiencing later internalizing problems for victims were 1.74 (CI: 1.49-1.96) times higher than for non-victims, after controlling for up to twenty major childhood risk factors.

On the other hand, there are studies that emphasize that initial mental health problems represent a significant predictor for future victimization (e.g. Turner, Finkelhor, Ormrod, 2010). Moreover, other studies suggest that having a psychiatric diagnostic and even the psychological consequences of victimization may also serve as precipitants for re-victimization, especially the

experience of psychological distress (defined as a composite score of the depression, anger, and anxiety scales) (Cuevas, Finkelhor, Ormrod, and Turner, 2009; Cuevas, Finkelhor, Clifford, Ormrod, and Turner, 2010). Moreover, in their study longitudinal study, Tran, Cole and Weiss (2012) indicate that after one-year depressive symptoms predicted change in both physical and relational victimization but neither type of peer victimization predicted change in depressive symptoms, and that depressive symptoms were more predictive of physical victimization for boys than for girls.

Considering the aforementioned aspects, in the current study, we aimed to investigate the reciprocal longitudinal relationship between bullying victimization and internalizing problems in a school-aged sample using a cross-lagged approach based on a 3-wave measurement. The associated hypotheses are H1: There will be a strong positive association between bullying victimization and internalizing problems cross-sectional. Moreover, we expected that the victimization in T1 will predict the experience of internalizing problems six months and one year later (H2).

III.3.2.Methodology

III.3.2.1. Participants

The participants were recruited from a school in a poor neighborhood in a large Romanian city. Consent was obtained from the school's management board and individual parental consents were sent to each child's parents. The initial sample was comprised from 185 students (52.2% girls and 47.8% boys, mean age 13.2, SD= 1.54). Participants were in grades from 5 to 8. The final sample (Wave 3) included 102 participants (M=14.2, SD= 1.31).

Participants on whom we had no missing data (n=102), participants on whom we had Wave 1 but no Wave 2 data (n= 57), and participants on whom we had Wave 1 but no Wave 3 data (n= 83) did not differ significantly on any variable. Observations with missing values were omitted from the samples. Moreover, we used full information maximum likelihood estimation to reduce the likelihood of bias due to the possibility of nonrandom patterns of missingness (Tran, Cole, Weiss, 2012).

III.3.2.2.Instruments

- ***Victimization and Bullying Scale***. Bullying and victimization were measured with the Romanian version of the original bullying questionnaire developed by Olweus [1993]. The questionnaire had distinct questions for being bullied or for bullying others. For each item, students had to indicate whether someone had behaved towards them in those specific ways described in the questionnaire. The answer options ranged from never 'never' (coded as '0'), 'once or twice' (1), 'sometimes' (2), 'about once a week' (3) or 'several times a week' (4) in the previous couple of months. The same procedure was used to measure bullying others, operationalized with six different types of behaviors. For the purpose of the present study, six new scores were then computed (a similar procedure was used in Baldry, 2004): 'Overall victimization' was obtained by adding up together the seven different items measuring the seven types of direct and indirect victimization, plus the general overall victimization item (alpha Cronbach = .80).
- ***Youth Self Report.*** The Romanian version of the Youth Self Report was used to measure the behavioral and emotional functioning of adolescents (Dobrean, 2009). YSR is a standardized

screening scale used to identify emotional and behavioral problems in children and adolescents and it is part of the original CBCL Scale for 11–18–year-old youths (Child Behavioral Check List, Youth Self-report for ages 11–18, Achenbach, 1991). For the purpose of the current study, we used the 112 items of YSR, that measure six subscales symptoms: somatic complaints, anxiety and depression, ADHD, ODD, conduct problems (alpha Cronbach= .939). From this scale, for the purpose of this study we used the ***Internalizing Problems Subscale.*** Internalizing behavior was measured with the 31 items subscale of the YSR. The internalizing scale consists of three dimensions: withdrawn behaviors, somatic complaints, and anxiety/depression. Each item is scored 0, 1, or 2 in response to 'not-true', 'somewhat true', or 'certainly true', currently or in the previous six months. A total score is computed for each sub-dimension by summing up items in that subscale; higher values indicate more problems. A final dimension was computed by adding together the scores to these dimensions.

III.3.2.3. Procedure

The time interval between the three waves of data collection was approximately of six months. Prior to each data collections, we distributed consent forms to children in participating classrooms to take home to parents in order to obtain their active consent. The first measure (Wave 1) was done in June at end the of summer semester. The next data collection (Wave 2) was done at the end of winter semester in January next year, and the final measurement (Wave 1) was done at the end of June semester in the same year. Because the school students who were in their 8^{th} grade in Wave 1 (27.3% of the initial sample) had to enroll to high school in the next school year, they could not be included in the next two measurements. Other missing date could be attributable to the fact that children were either missing from school in the day we proceeded with the measurements or that their parents did not continue to consent to their child participation in the study.

III.3.2.4. Data analysis procedure

First, differences between participants with and without missing data were analyzed. A logistic regression analysis model was performed using age and gender scores in T1 as predictors and the missingness (coded 0 - missing or 1 - not missing) of internalization and bullying scores in T2 and T3 as criteria variable. No model has been found to be significant, indicating that subject attrition has not been biased the initial sample. In order to test the necessary assumption of the chosen fit function, descriptive statistics and the normality of each variable was investigated. According to the guideline of normality proposed by West, Finch, and Curran (1995) assumption of normality is severely violated when skewness >2 or kurtosis >7).

Model fit was assessed with various indices: Chi-square statistic (κ^2), General Fit Index (GFI), Comparative Fit Index (CFI), the Tucker Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Levels of .90 or higher for GFI, CFI and TLI, and .08 or lower for RMSEA indicate a reasonably good model fit (Hu & Bentler, 1995; Byrne, 2002). Competing nested models were compared by means of the $\Delta\kappa^2$ and ΔCFI difference test. Significant $\Delta\kappa^2$ and values of ΔCFI higher than .01 were interpreted as significant model fit worsening or improvement (Weston & Gore, 2006; Chen, 2007; Cheung & Rensvold, 2002). Local fit indicators, such as the magnitude, sign, and t-values of the parameter estimates were also taken into account (Bollen, 1989). The model parameters and their goodness of fit were estimated using IBM AMOS 21 for Windows (Arbuckle, 2012).

III.3.3.Results

Descriptive statistics:

Means, standard deviations, and correlations between the study variables over the time period are presented in Table 1. Skewness and kurtosis indicators shown no sign of severe violation of normality, as a consequence in order to estimate the longitudinal cross-lagged model parameters and it is fit with the data Maximum Likelihood function was used (West, Finch, & Curran, 1995).

Table 1 Descriptive univariate and bivariate statistics for the study variables (N=111)

	Variables	1	2	3	4	5	6
1	InternalisationT1	1.000					
2	VictimisationT1	.332	1.000				
3	InternalisationT2	.485	.177	1.000			
4	VictimisationT2	.261	.271	.251	1.000		
5	InternalisationT3	.330	.158	.400	.187	1.000	
6	VictimisationT3	.169	.163	.334	.392	.341	1.000
	Mean	8.180	11.33	6.885	11.06	8.351	10.75
	Standard deviation	5.512	2.931	6.535	2.973	6.804	2.151
	Skew	.803	1.984	1.078	1.950	1.320	1.886
	Kurtosis	.700	4.450	.552	4.530	2.414	4.339

The pattern of correlations was in the expected direction. The correlations between internalizing problems and overall victimization scores were all positive and significant. Regarding the across-time stability of the variables, the test-retest correlations ranged from .33 to .49 (for internalizing problems) to .16 to .18 (for overall victimization).

Cross-lagged analysis results:

Several competing SEMs were tested to examine the causal relationship between internalizing problems and victimization. First, the baseline model (M1) included only longitudinal effects, without any cross-lagged associations. Second, the cross-causation model (M2) resembled M1, but included additional cross-lagged paths from Time 1 victimization to Time 2 internalizing problems and from Time 2 victimization to Time 3 internalizing problems. The third model, the reversed causation model (M3) resembled M1, consisting cross-lagged paths from Time 1 internalizing problems to Time 2 victimization and from Time 2 internalizing problems to Time 3 victimization. The last model, the reciprocal causation model (M4) resembled M1, but included additional reciprocal cross-lagged paths from victimization to internalizing problems and vice versa. Table 2 shows the fit indices of the competing models, as well as model comparisons.

Table 2. Comparison of the autoregressive cross-lagged models

Model	κ^2	df	*p*	GFI	CFI	TLI	RMSEA	RMSEA CI95%		Comparison	$\Delta\kappa^2$	Δdf	ΔCFI
M1	17.327	8	.027	.950	.905	.822	.103	.033	.17	-	-	-	-
M2	15.830	6	.015	.956	.900	.749	.122	.050	.197	M2-M1	1.497	2	.005
M3	5.016	6	.542	.985	1.00	1.00	.000	.000	.112	M3-M1	12.311	2	.095

Model	κ^2	df	*p*	GFI	CFI	TLI	RMSEA	RMSEA CI95%		Comparison	$\Delta\kappa^2$	Δdf	ΔCFI
M4	3.918	4	.417	.988	1.00	1.00	.000	.000	.143	M4-M1	13.409	4	.095

κ^2 - chi suare statistic; df – degree of freedom; p – probability of critical ratio value; GFI – general fit index; CFI – comparative fit index; TLI - Tucker-Lewis Index; RMSEA – root mean square error of approximation; RMSEA CI95% - 95% confidence interval for RMSEA; $\Delta\kappa^2$ - chi-square difference; Δdf – difference in degree of freedom; ΔCFI – difference in CFI.

The overall chi-square values were significant for M1 and M2, while the same indicator for models M3 and M4 were found to be non-significant; indicating that the last two models (reversed causation and reciprocal causation model) provided an adequate fit to the data. This conclusion is sustained by other fit indicators, which are below the expected threshold for the base line and the cross causation model (TLI and RMSEA). All the computed fit indicators for the reversed causation and the reciprocal causation model are well above the specified values.

The analysis of differences between the models shows that adding the cross-lagged paths from Time 1 victimization to Time 2 internalizing problems and from Time 2 victimization to Time 3 internalizing problems to the baseline model does not improve significantly the model fit ($\Delta\kappa^2$=1.497, df=2; ΔCFI=.005). While adding the cross-lagged paths from Time 1 internalizing problems to Time 2 victimization and from Time 2 internalizing problems to Time 3 victimization resulted in a significant increase of model fit ($\Delta\kappa^2$=12.311, df=2; ΔCFI=.095). The addition of reciprocal cross-lagged paths to the baseline model improves the comparative fit of the model, but the analysis of local fit indicators, path indices, their value and their statistical significance, shows no significant path indices for VictimisationT1 => InternalisationT2 and VictimisationT2 => InternalisationT3 (see Table 3).

Table 3. Parameter estimates of the cross-lagged model (Model 4)

Paths	B (β)	S.E	CR	*p*
VictimisationT1 => VictimisationT2	.210 (.207)	.097	2.169	.030
VictimisationT2 => VictimisationT3	.238 (.329)	.063	3.762	.001
InternalisationT1 => InternalisationT2	.567 (.479)	.105	5.415	.001
InternalisationT2 => InternalisationT3	.392 (.377)	.094	4.193	.001
InternalisationT1 => VictimisationT2	.103 (.192)	.052	2.007	.045
InternalisationT2 => VictimisationT3	.083 (.251)	.029	2.872	.004
VictimisationT1 => InternalisationT2	.042 (.019)	.197	.212	.832
VictimisationT2 => InternalisationT3	.212 (.092)	.206	1.029	.304

B - Non-standardized coefficients; β - standardized coefficients; S.E. – standard error of path coefficients; CR - critical ratio; p – probability of C.R.

In the last step of data analysis, progressively imposed constrained to the best fit model, the reversed causation model (see Table 4). First, equality constraint was imposed between the path coefficient from VictimisationT1 to VictimisationT2 and VictimisationT2 to VictimisationT3 (M5), the resulted increase of chi-square, $\Delta\kappa^2(1)$= 0.02 and the ΔCFI =0.000 was not significant. Similar results, $\Delta\kappa^2(1)$= 1.385 and the ΔCFI =0.000, were found for model M6 (imposing equality constraint between InternalisationT1 => InternalisationT2 and InternalisationT2 => InternalisationT3 path coefficients). Imposing further constraints to the model (M7), equality

constraint between the cross-lagged effects, from internalization to victimization (InternalisationT1 => VictimisationT2 and InternalisationT2 => VictimisationT3) show non-significant worsening of the model fit, $\Delta\kappa^2(1)= 0.011$ and the ΔCFI =0.000. The last model (M8) includes equality constraints between the correlation between structural errors of the endogenous variables of the model, the resulted decrease of fit was not statistically significant ($\Delta\kappa^2= 0.021$, df=1 and the ΔCFI =0.000).

Table 4. Comparison of constraint cross-lagged models

Model	κ^2	df	*p*	GFI	CFI	TLI	RMSEA	RMSEA CI95%		Comparison	$\Delta\kappa^2$	df	ΔCFI
M3	5.016	6	.542	.985	1.00	1.00	.000	.000	.112	-	-	-	-
M5	5.036	7	.656	.985	1.00	1.00	.000	.000	.095	M5-M3	0.02	1	.000
M6	6.421	8	.600	.982	1.00	1.00	.000	.000	.096	M6-M5	1.385	1	.000
M7	6.432	9	.696	.982	1.00	1.00	.000	.000	.083	M7-M6	0.011	1	.000
M8	6.453	10	.776	.982	1.00	1.00	.000	.000	.071	M8-M7	0.021	1	.000

κ^2 - chi square statistic; df – degree of freedom; p – probability of critical ratio value; GFI – general fit index; CFI – comparative fit index; TLI - Tucker-Lewis Index; RMSEA – root mean square error of approximation; RMSEA CI95% - 95% confidence interval for RMSEA; $\Delta\kappa^2$ - chi-square difference; Δdf – difference in degree of freedom; ΔCFI – difference in CFI.

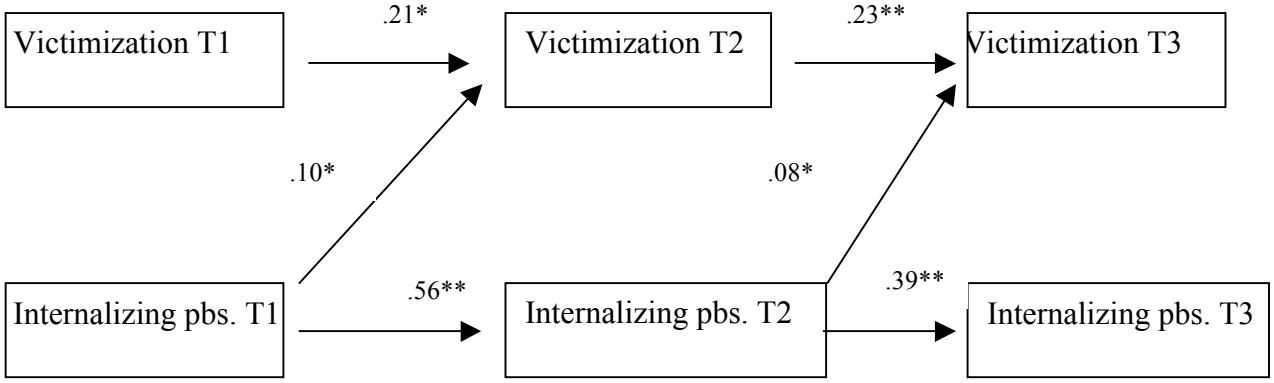


Figure 1. The final model (Model 4)

III.3.4.Discussions and Conclusions

In this study, we were interested in exploring the longitudinal relationships between bullying victimization and internalizing problems using a cross-lagged model. Prevailing theory and previous research indicate mixed findings when analyzing if victimization represents a risk factor for further development of internalizing problems or if initial experience of internalizing problems could be considered a risk factor for future victimization. Because previous studies have either used a cross-sectional approach or were based on two wave measurements, testing this standard causal linkage has not always been conclusive.

Our findings indicate that the experience of internalizing problems predicted changes in bullying victimization using a six months interval between measurements, but bullying victimization did

not predict changes in experiencing internalizing problems in the aforementioned time frame. These results support the idea that the expression of internalizing problems increases the likelihood of being bullied by peers and come in line with previous results reported in other longitudinal studies (McLaughlin, Hatzenbuehler, & Hilt, 2009; Sweeting et al., 2006). Moreover, the present findings expand upon previous studies that found similar effects but not focused specifically on internalizing problems (Tran, Cole, & Weiss, 2012). Experiencing internalizing problems could be seen as signs of vulnerability for future victimization.

In contrast with previous findings, our results did not indicate that bullying victimization significantly predicted changes in depressive symptoms (Sweeting et al., 2006). Several longitudinal studies provided evidence that bullying victimization during school years significantly predicts changes in depressive symptoms using time frames that ranged from 1-2 years (Sweeting et al., 2006, Zwierzynska et al., 2013) to longer time intervals (Klomek et al., 2008). In contrast, our results support previous findings that emphasize that depressive symptoms predict changes in peer victimization, even when they controlled for specific type of peer victimization (Tran et al., 2012). Moreover, the same study concludes that the mixed findings found when investigating the longitudinal relationship between bullying victimization and internalizing problems could be attributable to the time frame chosen with measurements (Tran et al., 2012). Most of the studies that used longer time lag (more than one year between measurements) indicate that bullying victimization significantly predicted changes in experiencing internalizing problems (Sweeting et al., 2006, Zwierzynska et al., 2013), whereas studies that used shorter time lags do not always find this association (McLaughlin et al., 2009).

This study enlarges the knowledge related to the longitudinal associations between bullying victimization and the experience of internalizing problems. Moreover, these results support Wolke et al.'s (2013) *conclusions stating that being bullied is not a harmless rite of passage but throws a long shadow over affected people's lives* (p.1).

CHAPTER 4

Study 3. TRADITIONAL AND CYBERBULLYING VICTIMIZATION AND THEIR ASSOCIATIONS WITH MENTAL HEALTH OUTCOMES IN SCHOOL AGED CHILDREN.

4.1. Introduction

The international epidemiological data suggest that besides bullying, also cyberbullying represent a major public health concern (Kowalski et al., 2014). Cyberbullying is defined as a repeated aggressive intentional act, carried out by a group or an individual, using electronic forms of contact (e.g. computers, cell phones) (Jacobs, Dehue, Völlink, Lechner, 2014). Recent studies report that the prevalence of cyberbullying victimization among 9- to 16-year-olds in Europe is around 8% (5% on the internet and 3% by mobile calls, texts or video; with a range from 2% to 14% across European countries); cyberbullying perpetration rates are lower, namely 3% have bullied others on the internet, while 2% have done so by using mobile calls, texts or video (Livingstone, Haddon, Gorzig, & Olafsson, 2011). On the other hand, according to the European report EU Kids Online II (Livingstone, 2011) children from Romania show the highest prevalence of cyberbullying compared to other European countries, 14% have been bullied on the internet, while 41 % percent report that have been bullied offline (traditional bullying) and online (cyberbullying). The same study indicates that 11 to 13 years old children have the highest probability of experiencing negative emotions associated with cyberbullying, and also children who have a low social-economical status (SES) tend to have higher probability of being cyberbullied. These results are in line with the results reported for traditional bullying.

Several studies emphasize the relationship between cyberbullying victimization and the experience of maladaptive mental health outcome (Turner, Lyn Exum, Brame, Holt, 2013). Moreover, there are studies which indicate that male and females adolescent cyberbullying victims might be differently affected by these incidents. For instance, female cyberbullying victims experienced higher levels of depression compared with their male counterparts (Turner et al., 2013). However, other studies conclude that the negative somatic and psychological effects of cybervictimization do not differ among male and females adolescents (Vieno et al., 2014). Some of the findings above did not take into account Olweus (2012) suggestion that research should focus on identifying the effects of cyberbullying independently of the possible effects of school bullying. Moreover, in their meta-analysis Kowalski et al., (2014) indicates that the relationship between cybervictimization and depression is moderated by gender for females participants, but only for the studies that had more female participants as males. Anyhow, this might suggest that across studies, young females exposed to cybervictimization could be more susceptible to experience negative consequences compared to their counterparts (Kowalski et al., 2014). Also, the worst outcomes in terms of mental health problems and social functioning had been associated with the adolescents who are simultaneously traditional and cyber- victims (Gradinger, Strohmeier, Spiel, 2009).

Considering all the arguments discussed above regarding the mixed results present in bullying victimization research literature, the present study aims to identify the overlap degree between traditional bullying victimization and cybervictimization in a representative sample for school aged children. Our hypothesis is that students who are cybervictimized are different from the children perpetrated in traditional bullying episodes. Secondly, we aim to identify the specific gender pattern for cyberbullying victimization. Our hypothesis was that girls will significantly have higher cybervictimization prevalence compared to their male counterparts. Furthermore, we aim to identify if being a cybervictim is associated with worst health outcome (mental and somatic health). Moreover, as a forth objective we aimed to investigate the relationship between electronic media usage and cybervictimization.

4.2. Methodology

The methodology for the data collection of the present study it is similar with the one used in the first study. The sample included it is based on the Romanian HBSC 2014 Survey sample. Data collection was based on using the standardized questionnaire within the HBSC network for the HBSC 2014 Survey.

4.2.1. Participants:

The characteristics of the sample are presented in Table 2.3. For this particular study, only the sample included in the HBSC 2014 Romania Survey was included (N=3980, 48.2% boys and 51.8% girls). The age range of the participants was 11 to 15 years old (M=13.22, SD=1.67).

4.2.2. Instruments:

Traditional bullying victimization. Traditional bullying victimization was measured using the question 'How often have you been bullied at school in the past couple of months?' Responses were rated on a five-point scale (1 = never; 2 = once or twice; 3 = two or three times a month; 4 = about once a week; 5 = several times a week). Two separate dichotomous variables were created: occasional victimization (once or twice through several times=1 a week vs. never=0) and frequent victimization (two or three times through several times a week=1 vs. never=0).

Cyberbullying victimization. Cyberbullying victimization was measured with two questions regarding experiences related to cyberbullying. The questions were 'How often have you been bullied at school in the past couple of months in the ways listed below? i). Someone sent mean instant messages, wall postings, emails and text messages, or created a Web site that made fun of me; ii). Someone took unflattering or inappropriate pictures of me without permission and posted them online. Responses were rated on a five-point scale (1 = never; 2 = once or twice; 3 = two or three times a month; 4 = about once a week; 5 = several times a week). Consistent with previous studies (e.g.Vieno et al., 2014), two dichotomous variables were created: occasional victimization (once or twice through several times=1 a week vs. never=0) and frequent victimization (two or three times through several times a week=1 vs. never=0).

Mental Health Problems. Strengths and Difficulties Questionnaire (SDQ), a 25-item behavioral screening questionnaire for 4- to 16-year-olds, was used for assessing emotional and behavioral problems (Goodman, 1997). Several studies have been shown that it is a good instrument for screening mental health problems in children and adolescence, similar with the CBCL

(Achenbach, 1991). Respondents were asked to rate the occurrence of various psychopathology symptoms within the last six months on three points scale (0 = not true, 1 = somewhat true, and 2 = certainly true). The answers are coded according to 5 scales: prosocial behavior, hyperactivity and attention problems, emotional problems, conduct problems and problems with peers. Items assessing emotional problems and problems with peers were added up to generate a total score for internalizing problems (10 items). A total score for mental health problems was computed by adding together the hyperactivity and attention problems, emotional problems, conduct problems and problems with peers' scales (20 items). The scales used in this study had satisfying internal consistencies (Emotional Problems Scale: α= .69, Internalizing Problems Scale: α= .65 and, Total Mental Health Problems: α= .77).

Psychosomatic complaints. A non-clinical measurement of 8 items was used (as part of the HBSC Symptom checklist) comprised of 8 items was used. The items measure psychological and somatic symptoms. For the purpose of the present study only Somatic Symptoms Dimension was used. This dimension includes three items: In the last 6 months, how often have you had the following? (i) headache; (ii) stomachache; (iii) backache. Students were considered to experience multiple somatic symptoms when they reported two or more symptoms more than once a week (Sentenac et al., 2012).

Control variables. Several variables were included as control variables: **1. Daily computer use**: students were asked how many hours per day they use a computer, laptop, Ipad, tables, etc. A dichotomous variable was created (1= more than two hours per day, 0= less than two hours per day); 2. **Electronic media communication with friends**: students were asked how frequently they contact their friends via: phone, SMS, email, instant messaging, and social media. Responses were rated on a 4 point scale (1=never to 4= daily). Dichotomous variables were computed for each mean of communication 1= daily electronic communication and 0=less than daily electronic communication; **3. Family Affluence Scale.** The FAS was comprised of four items: ''Does your family have a car or a van'' (0=no, 1= yes, one; 2=two or more), ''Do you have your own bedroom for yourself?'' (0=no, 1=yes), ''During the past 12 months, how many times did you travel away on holiday (vacation) with your family?'' (0= not at all, 1= once, 2= twice, 3= more than twice), and, ''How many computers does your family own?'' (0 =none, 1=one, 2=two, 3=more than two). Added together, these items produced a score that ranged from 0 (lowest affluence) to 7 (highest affluence) (Elgar, Craig, Boyce, Morgan, & Vella-Zarb, 2009). In the next phase, we created a categorical variable, where FAS was re-coded as it follows: low affluence=0–2, medium affluence =3–4, and high affluence=5–7 (Due et al., 2009).

4.2.3. Analysis Procedure:

Descriptive bivariate statistics were computed for the variables included in the study and the correlation coefficients among the variables included in the study were calculated. Next, prevalence of cybervictims, as well as internalizing problems and somatic complaints were compared by gender using *t* tests. Finally, binary logistic regression analyses with 95% confidence levels were used to examine the associations between victimization type, internalizing problems and somatic problems. All analyses were conducted using IBM SPSS Statistics version 21.

4.3. Results

In our sample, the majority of the participants were not involved in any type of bulling victimization, frequent (86.6%) or occasionally (57.3%) (Table 4.1.). When setting the cut-off point at 'more than 2-3 times in the past couple of months' only 2 % of the respondents indicated that they were victims of cyberbullying only (1.9% boys and 2% the girls). Moreover, 1.8% reported being simultaneously victims in traditional and cyberbullying episodes (2.1% boys and 1.5% the girls). Occasional victimization was reported more often. Overall, 9.1% of respondents indicated that they were cybervictims only (7.6% boys and 10.5%). A higher percentage (10.8%) reported to simultaneously experience occasional traditional and cyberbullying victimization (10.7% boys and 10.9% girls). Around half of the participants reported using computers during weekdays (47.6% boys and 49.4% girls) and during the weekends (56.4% boys and 61.5% girls). The most frequently used electronic mean of communication with friends was daily phone contact (31.4% overall; 26.4% boys and 35.8% girls), followed closely by daily chat contact (25.1% overall; 20.3% boys and 29.6% girls) and SMS contact (21.8% overall; 17.1% boys and 31.9% girls). Daily contact with friends via social networking sites (e.g. Facebook) was reported by 12.9 of the participants (11.5 boys and 14% girls). A significant gender pattern emerged for using electronic media when communicating with friends. With the exception of daily email contact, girls engaged themselves significantly more frequent in this type of behavior.

Table 4.1.. Descriptives statistics for the variables included in the study

	Total	Boys	Girls	
Frequent bullying involvement				
Noninvolved	86.6%	83.7%	89.1%	28.21***
Frequent traditional victimization only	9.7%	12.3%	7.4%	
Frequent cybervictimization only	2%	1.9%	2%	
Frequent cyber and traditional victimization	1.8	2.1%	1.5%	
Occasional bullying involvement				
Noninvolved	57.3%	55.7%	58.6	25.91***
Occasional traditional victimization only	22.8%	26.1%	20%	
Occasional cybervictimization only	9.1%	7.6%	10.5%	
Occasional cyber and traditional victimization	10.8%	10.7%	10.9%	
Computer use during weekdays (2+hrs)	48.5%	47.6%	49.4%	ns.
Computer use during weekends (2+hrs)	59.2%	56.4%	61.5%	10.40***
Daily phone contact	31.4%	26.4%	35.8%	36.12***
Daily SMS contact	21.8%	17.1%	31.9%	102.22***
Daily email contact	7.6%	7.4%	7.8%	ns.
Daily chat contact	25.1%	20.3%	29.6%	39.70***
Daily social network contact	12.8%	11.5%	14%	5.10*

*p <.05, **p <.01, ***<.001

Taking non-involved students as a reference group, the involvement in any type of frequent or occasional victimization was associated with higher chances for experiencing internalizing or

somatic problems. When taking frequent victimization as predictor, the chance of experiencing internalizing problems increased 3 times for participants exposed to traditional victimization only (OR=3.1; 95%CI=2.30-4.37) and 2 times for participants exposed to cybervictimization only (OR=13.05; 95%CI=3.79-16.06). For participants exposed to both traditional and cybervictimization the likelihood of experiencing internalizing problems increased 13 times (OR=2.08; 95%CI=1.45-5.43). A different pattern emerged for boys and girls. For boys, the exposure to both traditional and cybervictimization increased 18 times the chance of experiencing internalizing problems (OR=18.77; 95%CI=7.60-46.37). For girls, the exposure to both traditional and cybervictimization increased 9 times the chance of experiencing internalizing problems (OR=9.88; 95%CI=4.12-23.65). Moreover, for girls the exposure to cybervctimization only was not a significant predictor for internalizing problems. The overall prediction model for internalizing problems explained 10% of the total variance (Negelkerke R^2=.14 for boys and Negelkerke R^2=.09 for girls). Moreover, when introducing occasional victimization as a predictor, the exposure to both traditional and cybervictimization increased 4 times the chance of experiencing internalizing problems (OR=4.03; 95%CI=3.13-5.97). In this case, 9% of the total variance of internalizing problems were explained by the predictors included in the model (Negelkerke R^2=.08 for boys and Negelkerke R^2=.09 for girls).

Table 4.3. Odds ratio for experiencing internalizing problems and somatic problems for bullied participants

	Internalizing problems			**Somatic complaints**		
	Total	**Boys**	**Girls**	**Total**	**Boys**	**Girls**
	OR (95%CI)	**OR (95%CI)**	**OR (95%CI)**	**OR (95%CI)**	**OR (95%CI)**	**OR (95%CI)**
a. Noninvolved	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*
Frequent victim only	3.10 (2.30-4.37)**	2.49 (1.53-4.05)**	4.03(2.60-6.26)*	1.70(1.18-2.43)*	1.57(.81-3.05)ns	1.69 (1.04-2.74)*
Frequent cybervictim only	2.08 (1.45-5.43)**	7.79 (3.11-19.49)**	ns	2.30 (1.16-4.54)*	3.95(1.27-12.27)*	ns
Frequent traditional and cybervictim	13.05 (3.79-16.06)**	18.77 (7.60-46.37)**	9.88 (4.12-23.65)**	5.46 (2.94-10.14)**	8.44(2.85-24.99)**	ns
b. Noninvolved	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*	*(Ref).*
Occasional victim only	2.00 (1.52-2.65)**	ns	2.37(1.67-3.38)**	1.83(1.39-2.42)**	ns	2.24(1.59-3.16)**
Occasional cybervictim only	1.54 (1.01-2.34)*	2.28 (1.20-4.33)*	ns	1.85(1.26-2.73)**	ns	1.88 (1.18-2.98)*
Occasional Traditional and cybervictim	4.33 (3.13-5.97)**	4.24 (2.49-7.21)**	4.33 (2.88-6.50)**	2.50(1.25-2.81)**	4.07 (2.35-7.03)**	1.90(1.22-2.95)*

- controlled for age, FAS and electronic media use and electronic media communication with friends.
*p <.05, **p <.01, ***<.001

4.4. Discussions

The present study set out to explore the prevalence of cyberbullying (at several levels: frequent and occasional), and its association with internalizing and somatic problems. Moreover, a special

focus was dedicated to examine gender differences for the aforementioned associations. In line with other studies, a large proportion of the students involved in this study reports no exposure to bullying victimization (traditional or cyber) (Callaghan, Kelly, Molcho, 2014; Chester et al., 2015). Overall, 2% of the participants indicated exposure to frequent cybervictimization. This prevalence is lower compared to other results reported in other socio-cultural contexts (Callaghan, Kelly, Molcho, 2014; Vieno et a., 2014; Beckman et al., 2013). This could be attributable to the overall trend of not reporting this type of events. Moreover, as pointed out by the EU-KIDS ONLINE Survey (Livingstone et al., 2011) more than half of the school students included in their study indicated they have the technical skills and knowledge of how to protect themselves when surfing on the Internet. This could act as a protective factor against cybervictimization. When taking occasional victimization as a criteria (more than 1-2 times in the past couple of months), out of 10 participants indicate the exposure to cyberbullying. This result comes in line with other recent studies (Vieno et a., 2014). The overlap between traditional victimization and cyberbullying victimization is low. This could indicate that school students who are bullied via electronic media are not the same group as the one victimized face to face. In accordance to the main aim of the study, our results indicate that being a victim of cyberbullying is positively associated with internalizing and somatic problems, with the highest association found for the participants exposed to victimization offline and online. The regression analyses show that being a victim of both cyberbullying and traditional bullying was associated with the higher risk for experiencing internalizing and somatic health problems. This finding was constant across gender and level of victimization (frequent and occasional), with the exception of experiencing somatic problems for girls exposed to frequent victimization.

These findings could contribute to the design of future intervention within school context. Even if the overlapping between traditional and cybervictimization was not extremely high, it becomes mandatory to investigate the presence of cyberbullying victimization especially due to their negative impacts on victims' mental and somatic health. Moreover preventive actions should tackle bullying incidents, both traditional and cyber.

CHAPTER 5

Study 4. BULLYING VICTIMIZATION IN CHILDHOOD: WHICH FACTORS ACT AS BUFFER FOR HEALTH PROBLEMS IN ADULTHOOD?[1]

5.1.Introduction

Bullying behaviors are a particular type of aggressive behavior, which can be defined as any act intended to inflict injury and discomfort upon another individual (Olweus, 1993; 2013). There are several criteria used by specialists to distinguish bullying behaviors from other types of aggressive behavior: intentionality, repetitiveness and the imbalance of power (Olweus, 2013). Bullying also involves specific roles: bully, victim, bully-victim (or reactive victims), and by-standers (Olweus, 1993; Salmivalli, Lagerspetz, Björkqvist, Österman, Kaukiainen, 1996).

Bullying victimization: prevalence and consequences

According to recent international epidemiologic studies, bullying behaviors have high prevalence worldwide, with estimates ranging from 8.6% to 45.2% among boys, and from 4.8% to 35.8% among girls (Craig et.al 2009). At European level, the school children from Baltic countries reported higher rates of bullying and victimization, whereas northern European countries reported the lowest (Craig et al., 2009; Due et al. 2005). Among Romanian school aged children, bullying behaviors have a high prevalence. More specifically, 25.7% of 11 years old boys, 35.3% of 13 years old boys and 30.4% of years old boys have been experiencing victimization at least 2-3 times per month. Following a similar trend, 17.2% of 11 years old girls, 26.1% of 13 years old girls and 18.9% of 15 years old girls have experienced victimization for more than two-three times in the last month (Cosma & Baban, 2013). The authors identified a significant difference among the two genders, with boys reporting the engagement in these type of behaviors significantly more often. These findings are in line with research literature which emphasize that boys report higher rates of involvement in bullying (Olweus, 1993, Craig et.al 2009).

Also, it appears that for Romanian school children, having a low social economical status has been associated with higher rates of bullying victimization for both genders (Currie et al., 2012). Romanian school aged children, reported higher percentage for bullying other and being bullied compared to the HBSC average (Cosma, Baban, 2013).

A similar version was published by Cosma, A., Baban, A., Balazsi, R., (2014) Bullying Victimization in Childhood: Which Factors Act as Buffer for Health Problems in Adulthood, Procedia Social and Behavioral Sciences, 17, 102-106.

Resilience and bullying victimization

Resilience is present when an individual manifests positive development despite of experiencing several significant adversities (Luthar, Cicchetti, Becker, 2000). Positive relationships within the family are one important aspect that has been related with resilient development for children (Garmezy, 1985; Rutter, 1999). According to this research, the experience of positive relationships with the family diminishes the negative impact of adversity to which children had experienced (Rutter, 1999). One study which conceptualized the existence of resilient functioning for bullied children through the low depression scores indicate that being male, having high self-esteem, having low levels of conflict with parents and no victimization from siblings were characteristics associated with resilience (Sapouna, Wolke, 2013). Moreover, other longitudinal studies indicate that for children who experience bullying victimization characteristics such as: maternal warmth, sibling warmth and a positive atmosphere at home were associated with fewer emotional and behavioral problems (Bowes, Maughan, Caspi, Moffitt, Arseneault, 2010).

The present study had two main objectives. First, we investigated the prevalence of being bullied while growing up for the young adults. Secondly, we assessed the role of positive related family context in the relationship between being bullied during the first 18 years of life and health problems.

5.2.Methodology

5.2.1.Participants

Present study included 2088 participants (64.3% were female and 35.7% were male). We selected a representative sample for Romanian university students. The mean age of respondents was 24.51 years old (SD=± 7.09).

5.2.2.Instruments

The Adverse Childhood Experiences (ACE) questionnaires were used for this study. These questionnaires were developed by the Center for Disease Control and Prevention (Atlanta) in 1997, (www.cdc.gov/nccdphp/ace) and include *Family Health Questionnaire* and *Physical Health Appraisal Questionnaire*, both with separate versions for men and women. For the purpose of this study, the following dimensions were included: exposure to adverse childhood experiences, positive family related context, mental and somatic health problems.

5.2.3.Bullying Victimization

Questions about bullying experiences were preceded by the following introduction: *Here are some questions about bullying experience. We say a student is BEING BULLIED when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she doesn't like. But it is NOT BULLYING when two students of about the same strength quarrel or fight*. Being bullied was assessed by one question that respondents had to report the frequency with which they were bullied in school and away from school in the last 2 months. Response categories were: "I refuse to answer", "I haven't . . . ," "once," "a few times", and "several times" We included in our

analysis all answer which indicated a frequency of at least "once". Also, participants were asked to indicate the type of bullying to which they have been subjected to.

Positive Family Related Context

Positive family related context (PFRC) was measured using 7 items: *there was someone in your family: who took care of you; took you to the doctor; who loved you; who helped you feel important*; *your family members felt close to each other, your family members took care one of other; your family was a source of strength and support*. In order to verify the single-dimensionality of the scale, we used a confirmatory factorial analysis, and the computed fit indices supported the existence of a single factor. A composite score was computed by summing the score to each of the seven items, the final score ranged from 5 to 35.

Mental and Somatic Health problems

Mental health problems score was generated by adding the score of two items: "have you had depression" and "have you had sleep problems". A composite score was computed by summing the score to each of the seven items, the final score ranged from 0 to 2.

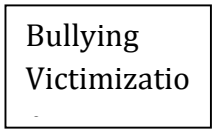
Somatic health problems score was computed by adding the score of the following items: constipation, high blood pressure, back pains, headaches, and problems with urinary tract. A composite score was computed by summing the score to each of the seven items, the final score ranged from 0 to 5.

5.2.4.Data analysis

For the purposes of the study we used univariate and bivariate descriptive statistics. In order to verify the hypothesis of our study, we tested a path analysis model. All the statistical procedures and analysis were done by using SPSS-IBM 20.

5.2.5.Results

Overall, 39.2% of participants reported they have been bullied during their childhood (first 18 years of life). We identified a significant gender difference ($p<0.05$), male participants reporting that they were bullied more frequently than female participants (46.3% of males vs. 35.5% of females). The most frequent victimization categories to which participants have been exposed to were: situations when other persons made fun because of the way they looked (28.7% of females vs. 7.8% of males), situations in which they were left out of activities on purpose (18.1% of males and 20.7% of females) or situations in which they were made fun of by the use of sexual jokes (13.8% of males and 11.6% of females). Female participants reported significantly more often than male participants that they have been made fun of because of the way they looked.



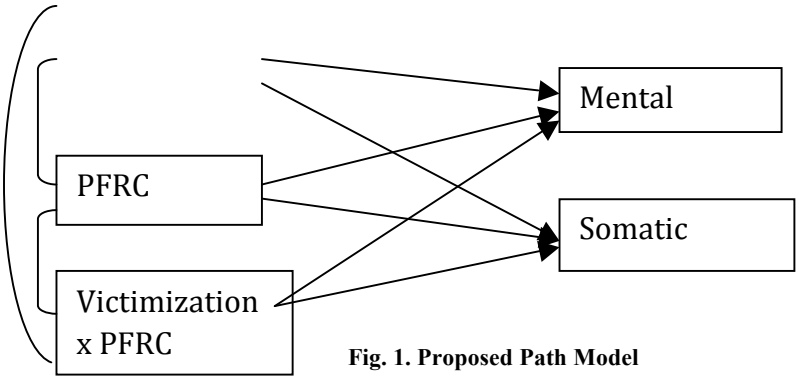


Fig. 1. Proposed Path Model

In order to verify our hypothesis, we specified a path analytic model using bullying victimization, PFRC and Bullying Victimization x PFRC as exogenous variable (predictors) and mental and somatic health as endogenous variable (criteria). The resulted model was just identified, as a consequence no global model fit was computed. Path indicators are presented in Table 1 (unstandardized coefficients).

Table 6 Path indicators for the proposed model

			Estimate	S.E.	C.R.	P
Mental Health	<---	Bullying Victimization	.175	.017	9.992	***
Somatic Health	<---	Bullying Victimization	-.104	.028	-3.692	***
Mental Health	<---	PFRC	.095	.018	5.402	***
Somatic Health	<---	PFRC	-.108	.029	-3.786	***
Somatic Health	<---	Bullying Victimization x PFRC	-.069	.027	2.603	.009
Mental Health	<---	Bullying Victimization x PFRC	-.029	.016	-1.788	.074

An increase with one unit of the bullying victimization scores was significantly associated with a .175 increase of the scores of mental health (p>.001). Also, an increase with one unit of the bullying victimization scores is significantly associated with a -.104 decrease of the scores of somatic health (p>.001). We indentified a significant association between PFRC and somatic and mental health. Specifically, an increase with one unit for the PFRC scores was associated with a .095 increase for mental health scores (p>.001). An increase with one unit for the PFRC scores was associated with a .108 decrease for somatic health scores (p>.001). Moreover, the interaction of bullying victimization and PFRC did moderate only the relationship between exposure to bullying victimization and somatic health scores.

5.3.Conclusions

This study brings new information upon the prevalence of retrospective bullying victimization for the Romanian university students' population and the role played by a positive family related context in the relationship between victimization and health outcomes. Bullying victimization experienced during the first 18 years of life by the young Romanian adults has a high prevalence. The prevalence is higher than the one previously identified in a Romanian school aged sample (Cosma & Baban, 2013). This difference could be attributable to the measurement scale. In the present study, participants were asked to recall how often they have been victimized in bullying episodes in their first 18 years of life, whereas the other study had a stricter time frame: only the incidents that have occurred in the last two weeks.

Being bullied during childhood has been associated with an increase in mental health problems in young adulthood. This finding comes in line with previous findings which emphasize the long term effects of bullying victimization (Wolke, Copeland, Angold, Costello, 2013). Moreover, the fact that we identified a negative relationship between being bullied and somatic health problems (an increase of bullying victimization was associated with a decrease of somatic health problems) could be due to the fact that our sample was formed by young adults who do not have yet seriously medical conditions.

One important aspect revealed by the present research is that for children who were bullied, the experience of positive related family context decreased the score for somatic health problems. Thus, in the context of having someone in their family who fostered positive interaction and care, the reported somatic health problems for bullied children were lower. The trend is similar for the mental health problems, but the association was not statistically significant. Future studies should focus on analyzing the role of positive family related factors in the interplay between different types bullying victimization (social bullying, physical bullying, cyberbullying) and health outcomes.

GENERAL DISCUSSIONS AND CONCLUSIONS

6.1. Overview of our findings

Extensive previous research indicate that the risk of being bullied declines steadily as the students advance in their school trajectories, with the highest values registered in late elementary school, followed by a constant decline in middle school and high school (Smith, Madsen, & Moody, 1999; Khoury-Kassabri et al., 2004). On the other hand, the trend for bullying perpetration is reported to have a different evolution. After an initial decline from elementary to middle school, towards the end of middle school it reaches a new peak (Olweus, 1993; Craig et al., 2009). It has been long indicated that school aged children involved in these behaviors (as bully, victim, or bully-victim) find themselves at risk for experiencing a wide range of maladjustment problems (Gini & Pozzoli, 2009, Arsenault et al., 2010). Moreover, extensive research indicate that children who are victims in bullying episodes continue to be at risk for a wide range of poor social, health, and economic outcomes decades after the incidents occurred (Takizawa, 2014, Copeland et al., 2014).

The findings from the first study (Study 1) suggest that overall, from 2006 to 2014, the prevalence of bullying behaviors in Romanian schools has significantly declined. It is beyond the aim of the present article to identify the reasons for this evolution, but we assume that specific school level interventions, combined with a higher awareness from the main stakeholders involved (from policy makers, school units, to parents and students) towards this phenomenon could be accountable for the identified trend. Even if the decreased trend could be seen as a positive societal and cultural outcome, the rates reported by the schoolchildren remain still incredibly high. For example, more than one in 10 students said they had been bullying other students more than two times in the past couple of months, with one in five boys reporting the same outcome. Moreover, for all measured behaviors (being bullied, bullying others and bully-victims) boys reported significantly higher levels of involvement compared to boys, with the highest rates being observed for the 13 years old age category. When analyzing specific risk factors for bullying involvement we found that for bullying others the following risk factors emerged: being a boy and in 13 years old age category, and having high SES. On the other hand, for being bullied and bully-victims, only being a boy and being part of the 13 years old age group were significant risk factors.

Study 2A reveals several gender differences for specific victimization types. Girls reported significantly more often indirect victimization (being excluded from activities, rumor spreading), whereas boys reported being exposed more often to direct victimization (hitting, name calling, etc). Social support from parents and friends was negatively correlated with victimization and internalizing problems and victimization was a significant predictor for internalizing problems, as well as the dimensions of social support measured. High levels of perceived parental support are protective especially for younger adolescents, whereas for older adolescents that are low victimized experiencing high levels of support from friends act as protective. Classmate support did not act as a protective factor neither for boys or girls.

The findings from Study 2B emphasize that being bullied was significantly associated with higher levels of mental health problems, especially internalizing problems. Even if a stronger buffering effect of the perceived social support was expected, it has been known that social

support may be most effective when the type of social support matches the needs of the individual (Cohen & McKay, 1984). In this context, high levels of parent and peer support seem to be protective for developing internalizing problems for students who are exposed to low victimization. On the other hand, low levels of support from friends could be considered a risk factor for younger students who are highly victimized. Support for classmates does not have a buffering effect either for girl or for boys.

Through the findings from the Study 2C, we brought longitudinal evidence that the experience of internalizing problems predicted changes in bullying victimization using a six months interval between measurements, but bullying victimization did not predict changes in experiencing internalizing problems in the aforementioned time frame. These results support the idea that the expression of internalizing problems increases the likelihood of being bullied by peers and come in line with previous results reported in other longitudinal studies (McLaughlin, Hatzenbuehler, & Hilt, 2009; Sweeting et al., 2006). Moreover, the present findings expand upon previous studies that found similar effects but not focused specifically on internalizing problems (Tran, Cole, & Weiss, 2012). Experiencing internalizing problems could be seen as signs of vulnerability for future victimization.

The **Study 3** offered a general overview regarding the overlapping from victimization in traditional or cyber-bullying episodes. Our results support the idea that the school-aged children exposed to this two different type of victimization are not part of the same group. The prevalence of cyberbullying, the values reported by male and females respondents were similar. Moreover, when analyzing for these groups the specific associations with mental and somatic health problems, the worst outcomes in terms of association with the experience of internalizing problems were for the boys that were simultaneously victimized online and offline.

The last study expands the previous knowledge regarding long-term association between exposure to victimization during childhood and health status during young adulthood. This study brings new information upon the prevalence of retrospective bullying victimization for the Romanian university students' population and the role played by a positive family related context in the relationship between victimization and health outcomes.

6.2. Limits and future directions

The conclusions of this study should be considered having in mind some methodological limits. First, with one exception, the studies included in this dissertation are based on a cross-sectional data, making it impossible to draw causal relationships between the variables investigated. Even if half of the studies were based on a representative sample, the generalization of the present data to the entire Romanian school aged population it is not possible. Second, even if a standard definition of what is bullying was presented, it might be that this measure does not encompass the entire meaning of what bullying actually is for the students. Moreover, in Romanian language there is not an equivalent word for 'bullying'. Therefore, the definition used offer the chance to make it clear for students what bullying was. Another limit could be attributable to the self-report measure that could support a non-reporting of this type of events (Greif and Furlong, 2006). However, across our studies, this risk might have been minimized, since the students responded to the questions anonymously (Beckman et al., 2013). Moreover, future studies should design their studies by including multiple informants. When using multiple informants in analyzing the buffering effect of social support on mental health problems, the results reported are quite mixed

(Averdijk et al., 2014). Collecting data from multiple sources would reduce personal biases common in self-report measures (Branson & Cornell, 2009) and minimize shared method variance (Tanigawa et al., 2011).

Future research should also examine at the qualitative level more aspects related to the main points made in this thesis. First of all, a qualitative examination of how students understand the present bullying victimization measuring tools (Olweus Bullying Questionnaire items), and more specifically to understand the cultural aspects that might interfere with the present definition and measuring method.

On the other hand, based on the present findings future research should develop specific interventions aiming to reduce and prevent bullying behaviors among children in Romanian schools.

6.3. Contributions of the present thesis

In the following paragraphs, we summarize the main theoretical, empirical and methodological contributions of the present thesis.

- An extensive overview was presented were we clarified the conceptual definition and measurement aspects of bullying phenomenon among school aged children; we presented the short and long-term consequences of bullying victimization, and we offered an overview of the most important theoretical/conceptual frameworks used in understanding the association between bullying victimization and maladjustment (**Chapter 1**).
- The first study in Romania and within Eastern European Region to investigate the evolution of bullying involvement among school aged children from 2006 to 2014 (**Study 1**).
- Complex time trends analysis using large cross-sectional database were conducted to evidence the bullying involvement for Romanian school aged children (**Study 1**).
- Designing one of the few studies that investigated the interaction between four dimensions of perceived social support (parental, friend, classmate, and teacher) by gender and by age (**Study 2A.).**
- Our results expand the existing in literature by bringing evidence that specific cognitive emotion regulation strategies are predictors for experiencing anxiety problems (catastrophizing) and depressive problems (acceptance and catastrophizing). Moreover, specific interactive protective factors emerged in the relationship between bullying victimization and mental health problems: positive refocusing (for both anxiety and depressive problems), low levels of catastrophizing and rumination (for anxiety problems) (**Study 2B.**).
- The first study to test the moderation effect played by gender and age in the interaction between bullying victimization and specific coping strategies in relationship with experiencing anxiety and depressive problems (**Study 2B.**).
- Our results expand the existing knowledge regarding the association in time between these two measurements by supporting the idea that the experience of internalizing problems represents a risk factor, vulnerability for future victimization 6 months later (**Study 2C.**).
- The first enquiry that aimed to investigate the specific overlaps between traditional and cybervictimization among Romanian school aged children (**Study 3.**).

- We expanded previous body of knowledge related to how exposure to a positive family related context could act as protective factor in face of experiencing somatic health problems during adulthood.
- We have undertaken complex statistical procedure to meet our initial objectives that combined the use of cross-sectional design with longitudinal research procedures.
- We have integrated our results and research findings in the larger body of the research literature on the role played by risk and protective factors involved in the relationship between bullying victimization and mental health problems.

As a general conclusion, our findings extend the emerging literature on analyzing the trends for bullying involvement among school-aged children. Moreover, our results expand the knowledge related to specific risk factors associated with bullying involvement, and more importantly the risk factors for developing mental health problems in case of exposure to bullying victimization (traditional or cyber).

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