



# Traditional and Cyber Bullying/Victimization Among Adolescents: Examining Their Psychosocial Profile Through Latent Profile Analysis

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## Abstract

Although increasingly more studies investigate the relationship of cyber and traditional bullying/victimization, it is unclear whether the phenomena are distinct. The purpose of this study was to investigate the roles that Greek Junior High school students engage in cyber and traditional bullying/victimization incidents, as well as the psychosocial and emotional profiles of the students that are classified into each participant role. Overall, 1097 Greek Junior High school students (mean age = 13.95, 51% girls) completed a self-report questionnaire about cyber and traditional bullying/victimization, empathy, psychopathic traits, online disinhibition, social skills, social anxiety, and peer relations. Latent profile analysis indicated four distinct groups of participants (“uninvolved,” “bullies,” “victims,” “bully/victims”). ANOVA and Kruskal-Wallis analyses showed that “uninvolved” students had the most adaptive profile (low scores in psychopathic traits and online disinhibition and high in social skills), while students who frequently bullied both online and offline (“bullies”) were the least functional of the sample (e.g., high scores in psychopathic traits and low in empathy and social skills) and differed on several characteristics from those classified as “bully/victims.” Finally, victims had a poor psychosocial profile (e.g., high social anxiety and poor social relations). These findings confirm that cyber aggression is part of a general bullying/victimization pattern and that students are most effectively classified based on their behavior and not the context of manifestation. Findings can contribute to the ongoing debate on the similarities/differences of cyber and traditional bullying/victimization, as well as their simultaneous occurrence.

**Keywords** Cyber bullying · Cyber victimization · Traditional bullying · Traditional victimization · Latent profile analysis · Psychosocial profile

## Abbreviations

CB	Cyber bullying	BES	Basic Empathy Scale
CV	Cyber victimization	YPI-short	Youth Psychopathic Traits Inventory-Short Version
TB	Traditional bullying	SSRS	Social Skills Rating System
TV	Traditional victimization	SCS	Self-Consciousness Scales
ICT	Information and Communication Technologies	SPPC	Self-Perception Profile for Children
LPA	Latent profile analysis	ANOVA	Analysis of variance
CBVEQ	Cyber-Bullying and Victimization Experiences Questionnaire	CE	Cognitive empathy
SSBB-R2	Student Survey of Bullying Behavior-Revised 2	AE	Affective empathy
		GM	Grandiose-manipulative
		CU	Callous-unemotional
		II	Impulsive-irresponsible
		SCSLS	Social Confidence and Socially Liberating subscales
		OD	Online disinhibition
		CO	Cooperation
		AS	Assertion
		SC	Self-control
		SA	Social anxiety
		SR	Social relations

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## Introduction

Despite the fact that during the last years increasingly more studies investigate cyber bullying/victimization (CB/CV) in general (e.g., Schultze-Krumbholz et al. 2015), and specifically their relationship with traditional bullying/victimization (TB/TV), it remains unclear how these behaviors might co-occur. While many researchers define CB/CV based on characteristics established for TB/TV, there is no agreement on the resemblance of the phenomena (Vandebosch and Van Cleemput 2009).

Based on research findings, four prevailing opinions are distinguished which support that students may be involved: (a) exclusively in one of two phenomena (e.g., McLoughlin et al. 2009), (b) in both phenomena with the same role (e.g., Katzer et al. 2009; Kowalski et al. 2008; Olweus 2012), (c) in both phenomena with opposite roles, or (d) in both phenomena with multiple roles (Fegenbush and Olivier 2009).

Researchers who support the similarity of the phenomena claim that they are highly correlated and involve the same students (e.g., Betts et al. 2017). According to the CB/CV and TB/TV definitions, both phenomena involve at least one perpetrator and one victim, while the existence of bully/victims has been repeatedly confirmed (Slonje et al. 2012), especially in CB/CV incidents (e.g., Antoniadou and Kokkinos 2013; Vandebosch and Van Cleemput 2009; Ybarra et al. 2006). Even though this classification is the most widely accepted among researchers, broader categorizations have been proposed, since a significant number of children and adolescents are not only aware of the incidents but also affect their occurrence, escalation, and prolongation (by actively supporting the bully or the victim, or by allowing the bullying to go on with their silence and passive behavior) (e.g., Salmivalli et al. 1996). This is evident in both TB/TV (e.g., Salmivalli et al. 1996) and CB/CV (e.g., Blais 2008; Willard 2007), since these phenomena are perpetuated within a social environment. Therefore, if CB/CV is a subtype or extension of TB/TV, at least four types of participant groups could be expected: uninvolved, victims, bullies, and bully/victims (Hollá 2016).

On the contrary, those claiming that the phenomena are different argue that CB/CV incidents take place in a different context compared to TB/TV, a fact that may affect the roles that students adopt. For example, students who are being victimized in school may act as bullies when they use Information and Communication Technologies (ICT) to take revenge (e.g., Englander and Muldowney 2007).

## Factors Related to Traditional and Cyber Bullying/Victimization

Several explanatory frameworks have been proposed to understand students' involvement in CB/CV, TB/TV, or both

(e.g., Routine Activities Theory, the Social-Ecological Model, the General Aggression Model), most of which refer to powerful factors, such as gender and various personal and interpersonal characteristics (Baldry et al. 2015; Olweus 1993). In terms of personal characteristics, numerous studies have suggested that bullying may occur more frequently among adolescents with high *psychopathic traits* (Witt et al. 2011), low *empathy*, and poor *social relationships* and *skills* such as *self-control* and *cooperation* (e.g., Aoyama and Saxon 2013). On the other hand, students with social difficulties (e.g., high *social anxiety* and *assertion* problems) may be more frequently the recipients of bullying behavior (e.g., Wolak et al. 2007).

## Gender

Although the results of the gender-related research are inconsistent, TB/TV research shows that boys adopt the bully role more frequently than girls (e.g., Olweus and Limber 2010), while the behaviors they exhibit are usually direct (e.g., Dilmac 2009). Findings show similar trends for CB/CV, since boys are more frequently classified as bullies (e.g., Barlett and Coyne 2014; Kokkinos et al. 2013; Kokkinos et al. 2016), while only isolated studies indicate the more frequent bullying behavior of girls (Ortega-Ruiz et al. 2009; Smith et al. 2008). Similar to TB/TV, girls tend to engage in indirect CB/CV behaviors (e.g., rumor spreading, social exclusion using social media) (e.g., Wang et al. 2009).

## Psychopathic Traits

In contrast to occasional aggressive acts, bullying incidents (both online and offline) have been associated with specific personality traits (e.g., Leistico et al. 2008). Researchers have frequently referred to psychopathic traits<sup>1</sup> (e.g., Fanti et al. 2012; Fanti and Kimonis 2012; Fanti et al. 2018; Kokkinos et al. 2014), which evidently are prevalent among both cyber (e.g., Antoniadou and Kokkinos 2013; Antoniadou et al. 2016a), and traditional forms of bullying (Fanti and Kimonis 2013; Sutton and Keogh 2000). Psychopathic traits are not perceived as a unidimensional construct and most studies have focused on the affective dimension (callous-unemotional traits), since lack of concern for others' feelings is highly predictive of both TB (e.g., Fanti and Kimonis 2012) and CB (e.g., Antoniadou et al. 2016a). Nevertheless, the other two dimensions have a significant impact on students' involvement as well; for example, grandiose-manipulative traits have been linked to CB (e.g., Orue and Andershed 2015) and

<sup>1</sup> They refer to a wide range of normal behaviors and not extreme and dysfunctional ones (Tacket and Mackrell 2011). Psychopathic personality is a multifaceted concept which is characterized by manipulation tendencies, egocentricity, superficial charm, lack of empathy and remorse, and impulsiveness (Hare 2003).

TB (e.g., Fanti and Kimonis 2012), since students with high scores in this characteristic tend to have an arrogant and deceitful interpersonal style, which provides them with a power advantage over their peers. Even though both traditional (Schwartz et al. 2001) and cyber bullies (e.g., Antoniadou et al. 2016a) have been found to be highly impulsive, contrary to other traits, the impulsive-irresponsible dimension has been linked to being targeted as a traditional (e.g., Antoniadou et al. 2016a) and cyber victim as well (e.g., Kokkinos et al. 2014), since impulsive individuals have higher chances of involving themselves in risky experiences (Fanti et al. 2009).

### Social Relations and Skills

Students' competency in social relations and skills has been extensively investigated in relation to TB/TV, as these behaviors take place within a social context (e.g., Nansel et al. 2001). In terms of TV exposure, findings have shown that friendly relations are indicative of sufficient social skills and that they both constitute a reassuring framework against victimization (e.g., Aoyama 2010). Although relevant findings regarding CV are still scarce, it has been found that adolescents who do not have adequate offline social relations have increased chances of experiencing online victimization (e.g., Hoff and Mitchell 2009), while cyber victims may have social deficits and use ICT more frequently but in a dangerous and socially dysfunctional manner (Bossler and Holt 2010; Rosen 2007). Despite the fact that findings regarding the social skills and relationships of bullies remain controversial, both TB (e.g., Bossler and Holt 2010) and CB (e.g., Wright and Li 2013) have been more frequently linked to poor social skills and limited social relations.

An important factor in preventing aggression and enhancing positive social behavior is empathy, which according to many researchers is distinguished in two dimensions, cognitive and affective (Eisenberg and Eggum 2009). Even though for several years there was no clear picture regarding the role of this trait, studies have identified low affective empathy in all participants involved in TB/TV (bullies, victims, and bully/victims) (Jolliffe and Farrington 2006; Kokkinos and Kipritsi 2012). In terms of cognitive empathy, studies show low scores among traditional victims (e.g., Woods et al. 2009), while findings regarding traditional bullies are controversial. More specifically, some studies have found low scores (e.g., Hymel et al. 2010; Kokkinos and Kipritsi 2012), while others high (e.g., Sutton et al. 1999), leading various researchers to suggest that traditional bullies who employ indirect behaviors, as well as ringleader bullies may have low affective and high cognitive empathy (Jolliffe and Farrington 2006). Recently, researchers have shown increased interest in understanding the manifestation of empathy deficits among CB/CV participants, since cyber aggression takes place in a social environment with limited non-verbal cues (Nicovich et al. 2005).

According to prior work, Internet users may have difficulty understanding others' emotions (e.g., Cková et al. 2013), with cyber bullies having low affective and cognitive empathy (König et al. 2010; Steffgen et al. 2011; Sticca et al. 2013; Topcu and Erdur-Baker 2012; Van Noorden et al. 2013). As poor affective empathy is a characteristic of individuals with psychopathic personality (Ciucci and Baroncelli 2014), it may be part of the emotional profile of the students involved in both CB and TB. Findings regarding cyber victims' empathy are contradictory, since some studies show that they score low in both dimensions which prevents them from recognizing, understanding, and regulating their feelings (Almeida et al. 2009; Kokkinos and Kipritsi 2012; Schultze-Krumbholz and Scheithauer 2009), but others have found high cognitive empathy among this population (Kokkinos et al. 2014; Van Noorden et al. 2013).

### Social Anxiety

Finally, students with high social anxiety report physical, verbal, and social victimization more frequently compared to their peers (Richard et al. 2011), since their negative self-assessment and their tendency to focus on the unpleasant incidents contribute to a significant extent to their inability to protect themselves during an (offline or online) aggressive event (Karlen and Daniels 2011; Pabian and Vandebosch 2015). Many studies have proposed social anxiety as an antecedent and consequence of TV (e.g., Van den Eijnden et al. 2014) and CV (e.g., Kowalski and Limber 2007), while limited findings have found links between social anxiety and TB or CB (Harman et al. 2005).

### Online Disinhibition and Differentiated Involvement

The possible involvement of students only in CB/CV incidents (but not TB/TV), or in both phenomena with opposite roles, is particularly intriguing for the researchers and has been linked to the nature and characteristics of ICT. Specifically, several investigators have suggested that some students may act as bullies only in online settings, which could be related to unique factors, such as online disinhibition (Low and Espelage 2013). As Wright, Harper, and Wachs (2018) state, online disinhibition refers to the tendency to feel less inhibition and concern for the consequences of one's actions in the online world; it may have both positive (e.g., exploring personal identity, being more social) and negative (e.g., implication in antisocial or illegal activities) personal and social consequences, and it might be affected by students' individual characteristics. Students who cyberbully without realizing it are affected by the intangible nature of the Internet and their behavior frequently derives from an attempt to have fun and from their inability to realize that their actions have significant

consequences for the recipient (Aftab 2008). Bullies who seek popularity may behave in a similar manner, while their actions might become prevalent due to the attention provided by uninvolved students (Aftab 2008). Furthermore, studies have indicated that cyber bullies tend to experience less empathy for their victims compared to perpetrators of traditional bullying (Steffgen et al. 2011), which has been attributed to their inability to see the victim's reactions and to share his/her feelings (Slonje et al. 2012). Therefore, cyber bullying has been also viewed as a dysfunctional reaction to problematic offline relationships with peers or to the lack of friends (Wright and Li 2013).

### Current Study

Overall, the common or differentiated participation of students in TB/TV and CB/CV should be sought in personal and intra-personal factors as well as in factors related to ICT (Rigby 2004). The purpose of this study was to investigate the roles that Greek Junior High school students, the most frequently implicated age group (Slonje and Smith 2008), adopt in CB/CV and TB/TV incidents, as well as the psychosocial and emotional profiles of each participant role.

In this study, bullying and victimization participation is investigated with the use of latent profile analysis (LPA). Such approaches have been described as “person-based,” since profiles are identified based on participants' responses (Wang et al. 2010). Despite the fact that previous researchers have underlined that contrary to traditional classifications (e.g., use of arbitrary cut-off points), alternative methods such as LPA are ideal for the examination of the overlap in different forms of bullying/victimization (Bradshaw et al. 2015), LPA has rarely been used to examine CB/CV and TB/TV participation. For example, Mindrila, Davis, and Moore (2015) attempted to develop a typology of victimization based on the extent to which 497 adolescent students (ages 12–18) experienced TV and/or CV using LPA and concluded in three latent profiles (average, traditional/cyber victims, traditional victims). In a similar vein, Mehari (2014) hypothesized that the form of aggression (i.e., physical, verbal, and relational) would be more effective in explaining relations among aggressive behaviors than the used mean (offline or online) and indeed using LPA found that the two emerging groups were not distinguishable by the media they used to perpetrate aggression but were distinguished into a moderately aggressive class and a low aggressive class.

In the present study, LPA was applied to (a) examine patterns of involvement in CB/CV and TB/TV and (b) explore individual characteristics across the latent classes. As Bauman, Walker, and Cross (2013) note, studying bullying and victimization through participant roles and

comparing participants' profiles makes conclusions easier and links research findings directly to intervention. While specific hypotheses were not formulated due to the scarce investigation of the issue, at least four types of participant groups were expected (uninvolved, victims, bullies, and bully/victims) according to their involvement in CB/CV and TB/TV (Hollá 2016). In terms of their characteristics, uninvolved students were anticipated to have the most adaptive psychosocial profile (i.e., the highest scores in social relations and social skills and the lowest in psychopathic traits, online disinhibition, and social anxiety), victims were expected to be more frequently girls and to have low scores in social relations and social skills (e.g., Aoyama 2010; Hoff and Mitchell 2009) and high in social anxiety (e.g., Kowalski and Limber 2007; Van den Eijnden et al. 2014) and impulsive-irresponsible traits (e.g., Antoniadou et al. 2016a; Kokkinos et al. 2014), bullies were expected to be more frequently boys (Kokkinos et al. 2013; Olweus and Limber 2010) and to have the highest scores in psychopathic traits (e.g., Antoniadou et al. 2016a; Fanti and Kimonis 2012; Orue and Andershed 2015), while finally bully-victims were expected to have higher scores in psychopathic traits than uninvolved and victims.

### Materials and Methods

The study was conducted during the last trimester of the school year with the use of self-report questionnaires among 1097 students (final sample, after withdrawals, selected with proportional stratified sampling) attending the three grades of Junior High school (mean age = 13.94) in the regions of Eastern Macedonia-Thrace and Central Macedonia, Greece. In terms of their gender, 50.9% of the students were girls (0.2% had missing gender data), while 30.7% attended the 1st grade of Junior High school, 38.9% the 2nd, and 30.4% the 3rd. Prior to the main study, pilot testing was conducted for the assessment of comprehensibility and completion time.

For the main study, permission was received from the Institute of Educational Policy, a consulting body of the Greek Ministry of Education, Research and Religious Affairs. After parental consents were obtained, students were informed about the purpose of the study and their voluntary and anonymous participation. Withdrawal was minimal (9 students, which is < 1%) and students completed the questionnaire within 45' in their regular classroom (approximately 20 students per class). The researcher monitored the room to ensure confidentiality. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



## Measures

All scales (except for the “Cyber-Bullying and Victimization Experiences Questionnaire” which was developed in Greek and the “Student Survey of Bullying Behavior-Revised 2” which had been previously translated by Greek researchers) were translated in Greek with the assistance of two bilingual psychologists using the front and back translation method. Also, for the purposes of statistical analyses, scale scores were calculated based on the average of scores across items specific to each scale.

## Demographics

The first part of the questionnaire aimed at collecting information on the demographic characteristics of the participants, namely gender and grade.

## Cyber Bullying/Victimization Experiences

The “Cyber-Bullying and Victimization Experiences Questionnaire” (CBVEQ) (Antoniadou et al. 2016b) assesses the occurrence of *direct* (e.g., “Has anybody sent you a message (via cell phone or the Internet) in order to mock you, or talk badly to you?”) and *indirect* (e.g., “Has anyone said bad things about you on the Internet in order to make your friends un-friend, “block” or dislike you?”) CB/CV behaviors during the last 90 days on a 5-point frequency scale (1 = *Never*, 5 = *Every day*) among children and adolescents. The use of the CBVEQ in studies among preadolescent (Antoniadou et al. 2016a; Kokkinos et al. 2013; Kokkinos et al. 2016) and adolescent (Antoniadou and Kokkinos 2013; Kokkinos and Voulgaridou 2017) participants has shown adequate reliability and has indicated the existence of two distinct but correlated factors (i.e., CB and CV). In this study, the reliability of the scales was high (Cronbach’s  $\alpha = .95$  for both scales).

## Traditional Bullying/Victimization

Twenty-four items were used from the “Student Survey of Bullying Behavior-Revised 2” (SSBB-R2), which assesses TB/TV involvement (*direct*, e.g., “How often do older, bigger, more popular or more powerful kids pick on you by hitting or kicking you?”; *verbal*, e.g., “How often do older, bigger, more popular or more powerful kids pick on you by calling you names?”; and *relational*, e.g., “How often do older, bigger, more popular or more powerful kids pick on you by spreading rumors about you?”) on a 5-point Likert scale (1 = *Never* to 5 = *Almost daily*), among preadolescents and adolescents (Varjas et al. 2006). SSBB-R2 has previously been found to have satisfactory psychometric properties (e.g., Fanti et al. 2009; Hunt et al. 2005; Varjas et al. 2006), while it has been

verified that TB and TV items load into two different factors (TB and TV) (e.g., Antoniadou et al. 2016a; Fanti et al. 2009; Varjas et al. 2010). The reliability of both TB and TV scales in this study was excellent (TB  $\alpha = .96$ , TV  $\alpha = .93$ ).

## Empathy

The 20-item “Basic Empathy Scale” (BES) (Jolliffe and Farrington 2006) assesses *cognitive* empathy (e.g., “I can understand my friend’s happiness when she/he does well at something”) (9 items) and *affective* empathy (e.g., “After being with a friend who is sad about something, I usually feel sad”) (11 items) on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*), among preadolescents and adolescents. Factor analysis has showed that items load into the respective factors (Jolliffe and Farrington 2006), while BES has been successfully used in previous studies among Greek preadolescent and adolescent participants (Antoniadou and Kokkinos 2013; Kokkinos and Kipritsi 2018). The reliability of the scales was acceptable (cognitive empathy  $\alpha = .82$  and affective empathy  $\alpha = .84$ ).

## Psychopathic Traits

The 18-item “Youth Psychopathic Traits Inventory-Short Version” (YPI-short) (Van Baardewijk et al. 2010) was used to assess the three dimensions of psychopathy: *grandiose-manipulative* (e.g., “It’s easy for me to make other people do things that suit me well”), *callous-unemotional* (e.g., “When other people have problems, it is usually their own fault and that’s why you should not help them”), and *impulsive-irresponsible* (e.g., “I get bored quickly by doing the same thing over and over”), using a 4-point scale (1 = *Not true at all*, to 4 = *Applies very much*). The scale has been previously shown to have good reliability and validity (Van Baardewijk et al. 2010) and has been successfully used with Greek-speaking samples (Antoniadou and Kokkinos 2013; Fanti et al. 2009). In this study, findings indicated good and acceptable reliability scores for all scales (grandiose-manipulative  $\alpha = .86$ , callous-unemotional  $\alpha = .78$ , impulsive-irresponsible  $\alpha = .82$ ).

## Online Disinhibition

Students’ tendency to display disinhibited behavior while connected to the Internet was assessed with the use of the 15 items of the “Internet Behavior and Attitudes Scale” (Antoniadou and Kokkinos 2013; Morahan-Martin and Schumacher 2000) (e.g., “Going Online has made it easier for me to make friends”) on a 4-point scale (1 = *Strongly disagree* to 4 = *Strongly agree*). The factorial structure, reliability, and validity of the scales have been confirmed in previous studies (e.g., Morahan-Martin and Schumacher 2000; Kokkinos et al. 2016), while the internal consistency for this study was good ( $\alpha = .82$ ).

## Social Skills

The “Social Skills” scale from the “Social Skills Rating System” (SSRS) (Gresham and Elliot 1990) was used to assess students’ *cooperation* (e.g., “I listen to adults when they are talking to me”) (9 items), *assertion* (e.g., “I start talks with class members”) (11 items), and *self-control* (e.g., “I control my temper when people are angry with me”) (10 items) on a 3-point scale (0 = *Never* to 2 = *Always*). The validity and reliability of the scale have been already confirmed (Gresham, and Elliott 1990; Vaz et al. 2013). The internal consistency of the subscales in this study was good (cooperation  $\alpha = .86$ , assertion  $\alpha = .81$ , and self-control  $\alpha = .85$ ).

## Social Anxiety

For the assessment of social anxiety, the 6-item subscale of Fenigstein, Scheier, and Buss’s (1974) “Self-Consciousness Scales” (SCS) was used. Students were asked to indicate on a 5-point Likert scale how often they behave in the described manner (e.g., “I feel anxious when I speak in front of a group”) (from 0 = *Never* to 4 = *Always*). The validity and reliability of the scale have been previously confirmed in Greek samples (e.g., Mylonas et al. 2012; Panayiotou and Kokkinos 2006). The internal consistency of the scale was found acceptable ( $\alpha = .70$ ).

## Peer Relations

For the assessment of students’ relations with their peers, the Greek standardized version of “Self-Perception Profile for Children” (SPPC) (Harter 1985; Makri-Botsari 2001) was used (e.g., “I find it hard to make friends”). The 5-item scale is scored on a 4-point scale (1 = *lowest perceived competence* to 4 = *highest level of competence or adequacy*). Previous studies have indicated good psychometric properties for high school students (Makri-Botsari 2001). Cronbach’s alpha indicated good reliability for this study ( $\alpha = .83$ ).

## Plan of Analyses

Bivariate correlations were calculated among variables using Pearson’s  $r$  coefficient. Latent profile analysis (LPA) in Mplus 7 (Muthén and Muthén 2010) was used to identify bully-victim groups based on adolescent scores on CB/CV and TB/TV. LPA identifies different latent classes by decomposing the covariance matrix to highlight relationships among individuals, and clusters individuals that are similar on the constellation of indicators into latent classes (Muthén and Muthén 2010). Models that specify different numbers of classes are tested. The Bayesian information criterion (BIC) and Lo-Mendel-Rubin (LMR) statistics are used as statistical criteria to

compare models to identify the optimal number of groups to retain (Nylund et al. 2007). The model with the lowest BIC value is preferred (Schwartz 1978). A non-significant chi-square value ( $p > .05$ ) for the LMR statistic suggests that a model with one fewer class is preferred (Lo et al. 2001). Further, average posterior probabilities and entropy values equal to or greater than .80 indicate clear classification and greater power to predict class membership (Clark and Muthén 2009).

Analysis of variance (ANOVA) and Kruskal-Wallis analyses were applied using the IBM SPSS 21 to investigate the differences among means and mean ranks of different groups. Callous-unemotional and impulsive-irresponsible traits, affective empathy, assertion, self-control, and social anxiety were tested with one-way ANOVA, and in all cases, post hoc multiple comparisons using the Tukey HSD test were used. A series of Kruskal-Wallis tests were performed due to homogeneity invariance in the cases of CB, CV, TB, TV, online disinhibition, grandiose-manipulative traits, cognitive empathy, cooperation, and social relations.

## Results

### Descriptive Statistics

Overall, participants reported more frequent involvement in TV, followed by TB, CV, and CB. Cognitive empathy scores were higher than affective empathy scores, while in terms of psychopathic traits, students had the highest scores in the impulsive-irresponsible dimension. Students scored higher in cooperation compared to assertion and self-control. Finally, students mean scores in social anxiety were relatively low, while on the contrary in social relations were rather high (Table 1).

### Correlations

CB, CV, TB, and TV had all significant positive intercorrelations, with the highest being between CB and TB, as well as between CV and TV. Significant positive correlations were observed between all aggression constructs with psychopathic traits and online disinhibition, and negative with cooperation. Both CB and TB were negatively correlated with cognitive and affective empathy, while TV had a negative correlation with cognitive empathy. Social relations correlated positively with CB and negatively with TV, while CB, CV, and TB correlated positively with assertion and negatively with self-control. In terms of social anxiety, positive correlations were observed with both CV and TV (Table 2).

**Table 1** Descriptive statistics

Measure	Scale	Range	<i>M</i>	<i>SD</i>
CBVEQ	CB	3.5	1.20	.40
	CV	2.5	1.23	.33
SSBB-R2	TB	4	1.45	.71
	TV	4	1.58	.72
BES	CE	3	3.87	.59
	AE	3.27	3.36	.50
YPI-short	GM	3	1.66	.60
	CU	3	1.84	.58
	II	3	1.96	.58
SCSLS	OD	2.87	0.60	.46
SSRS	CO	2	1.31	.42
	AS	2	1.10	.43
	SC	2	1.14	.38
SCS	SA	4	1.64	.93
SPPC	SR	3	2.96	.52

*CBVEQ* Cyber-Bullying and Victimization Experiences Questionnaire, *CB* cyber bullying, *CV* cyber victimization, *SSBB-R2* Student Survey of Bullying Behavior-Revised 2, *TB* traditional bullying, *TV* traditional victimization, *BES* Basic Empathy Scale, *CE* cognitive empathy, *AE* affective empathy, *YPI-short* Youth Psychopathic Traits Inventory-Short Version, *GM* grandiose-manipulative, *CU* callous-unemotional, *II* impulsive-irresponsible, *SCSLS* Social Confidence and Socially Liberating subscales, *OD* online disinhibition, *SSRS* Social Skills Rating System, *CO* cooperation, *AS* assertion, *SC* self-control, *SCS* Self-Consciousness Scales, *SA* social anxiety, *SPPC* Self-Perception Profile for Children, *SR* social relations

### Latent Profile Analysis

To identify the optimal number of groups to retain, models with one to five classes were estimated using LPA. The BIC statistic increased from class 4 (BIC = 3065.31) to class 5 (BIC = 3273.22) and decreased from class 3 (BIC = 3567.23) to class 4. In addition, the LMR statistic fell out of significance for the five-class model ( $p = .08$ ). Thus, the four-class model better represented the data based on the BIC and LMR statistics. The mean posterior probability scores ranged from .90 to .98 and the entropy value was .94, suggesting that the identified classes were well separated. Figure 1 shows standardized *z*-scores by group on each grouping variable. As presented in Fig. 1, the group with the lowest scores in all aggression constructs (i.e., CB, CV, TB, and TV) was labelled “uninvolved.” The group of students with the highest scores in both CB and TB was labelled as “bullies,” while the one with the highest CV and TV scores was labelled as “victims.” Finally, the group of students who had high scores in CB, CV, and TB simultaneously was labelled “bully/victims.” The number of children identified in each group is shown in Table 2. Overall, most students of the sample were classified as uninvolved (75%), followed by bully-victims (11.2%), victims (8.2%), and bullies (5.6%).

### Group Distribution and Students’ Gender

According to Table 3, boys participated more frequently in bullying/victimization compared to girls who were most frequently uninvolved. Specifically, boys adopted the bully and bully/victim role more frequently than girls, whereas differences were not so vast among victims.

### Group Differences in Terms of Students’ Characteristics

One-way ANOVA and Kruskal-Wallis analyses tested whether participant roles had any significant effect on students’ scores in the variables under study (empathy, psychopathic traits, online disinhibition, social skills, social anxiety, and peer relations). Results showed that participants’ scores significantly differed in terms of group, in all variables (Tables 4 and 5).

One-way ANOVA tests indicated that uninvolved students had lower scores than all groups in callous-unemotional traits, while in the same characteristic, bullies had higher scores than bully/victims. In a similar vein, uninvolved students scored lower than all groups in impulsive-irresponsible traits, while bullies higher than bully/victims and victims. In terms of affective empathy, victims had higher scores than bully/victims and bullies. In assertion, bullies scored higher than uninvolved students and victims, while bully/victims higher than uninvolved students and victims. Regarding self-control, uninvolved students had higher scores than bully/victims and bullies, while bullies lower than victims. Finally, in social anxiety, victims scored higher than all groups (Table 4).

Kruskal-Wallis tests that were applied due to homogeneity invariance showed that uninvolved students had lower scores than all groups in CB, CV, TB, and TV. Victims had lower scores in CB than bullies and bully/victims, lower scores than bullies in TB, and higher scores in TV than both bully groups. Also, uninvolved students had lower scores than all groups in online disinhibition, while bullies higher scores than victims and bully/victims in the same characteristic. In terms of grandiose-manipulative traits, bullies scored higher than all groups, while similarly, bully/victims higher than uninvolved and victims. In cognitive empathy, bullies had lower scores than all groups. Regarding cooperation, bullies and bully/victims scored lower than victims and uninvolved students. Finally, victims reported poorer social relations than all groups (Table 5).

### Discussion

The purpose of this study was to investigate the roles that Greek Junior High school students adopt in CB/CV and TB/TV incidents, as well as the psychosocial and emotional

**Table 2** Correlations

	CB	CV	TB	TV	GM	CU	II	CE	AE	SR	CO	AS	SC	SA
CV	.39**													
TB	.46**	.24**												
TV	.24**	.43**	.28**											
GM	.41**	.25**	.29**	.10**										
CU	.19**	.17**	.12**	.20**	.20**									
II	.29**	.27**	.25**	.21**	.39**	.35**								
CE	-.16**	-.04	-.17**	-.08*	.02	-.01	.07*							
AE	-.08**	.04	-.12**	.05	-.06	-.08**	.06*	.28**						
SR	.08**	-.05	-.02	-.30**	.19**	-.03	.05	.18**	-.06					
CO	-.33**	-.20**	-.30**	-.07*	-.22**	-.12**	-.22**	.31**	.15**	-.01				
AS	.15**	.12**	.12**	-.02	.29**	.08**	.18**	.19**	-.07*	.37**	.09**			
SC	-.19**	-.14**	-.20**	-.03	-.18**	.01	-.18**	.25**	.13**	.05	.64**	.20**		
SA	.05	.18**	.04	.28**	.04	.28**	.25**	.01	.21**	-.32**	.01	-.23**	-.03	
OD	.33**	.41**	.25**	.26**	.39**	.27**	.39**	-.10**	-.02	-.01	-.25**	.13**	-.19**	.25**

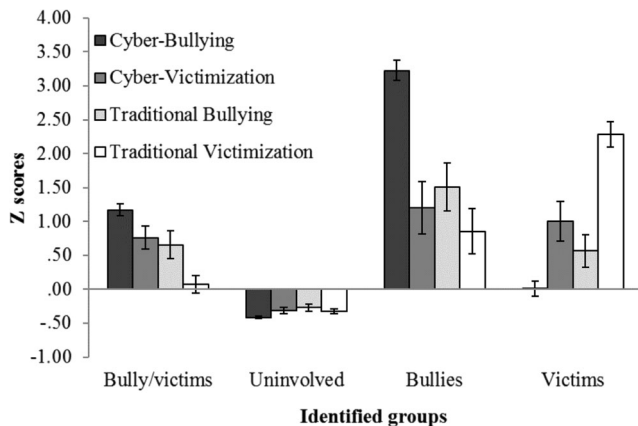
CB cyber bullying, CV cyber victimization, TB traditional bullying, TV traditional victimization, GM grandiose-manipulative, CU callous-unemotional, II impulsive-irresponsible, CE cognitive empathy, AE affective empathy, SR social relations, CO cooperation, AS assertion, SC self-control, SA social anxiety, OD online disinhibition

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

profiles of each participant role. Results indicated four distinct groups of participants: “uninvolved” (low in CB, CV, TB, TV), “bullies” (high in CB and TB), “victims” (high in CV and TV), and “bully/victims” (high in CB, CV, and TB). It should be noted that all groups of students except for the “uninvolved” had some degree of participation in CB, CV, TB, and TV. Although this overlap between the phenomena (CB, CV, TB, and TV) has been previously found in numerous studies (e.g., Bauman and Newman 2013; Hinduja and Patchin 2008; Olweus 2012), it made the determination of the groups challenging. For example, it could be argued that students included in the “bully” group could also be labelled as “bully/victims” since they concurrently participated in CB, TB, CV, and TV. Nevertheless, due to their predominantly bullying tendencies, the optimal labelling seemed “bullies.” Contrary, while students who ended up being labelled as

“bully/victims” participated in CB, TB, and CV, the differences between their bullying and victimization scores were not that immense. Previous findings support the final labelling choice since most of the participants were classified as uninvolved, followed by bully-victims, victims, and bullies. Earlier studies have indeed shown that more students adopt the bully/victim role than the bully role, especially in cyberspace, which has been linked to the ability of the victim to retaliate with ease, as well as to the online risks that the bully poses to him/herself (e.g., Grading et al. 2009). The group of the victims is constantly found larger in studies investigating CB/CV and/or TB/TV (e.g., Raskauskas and Stoltz 2007), since bullies tend to target not one, but several students due to their need to dominate (e.g., Olweus 1993). Nevertheless, comparing the percentage of participant groups among studies is not always plausible since the various findings may stem from different research methodologies (Grading et al. 2012).

Overall, the findings of this study may provide support to previous claims that CB/CV and TB/TV co-occur, or that both



**Fig. 1** Latent profiles of cyber and traditional bullying/victimization

**Table 3** Crosstabulation between gender and groups (%)<sup>a</sup>

	Groups				Total
	Bullies	Victims	Bully/victims	Uninvolved	
Boys	44 (8.2)	50 (55.6)	75 (61)	368 (44.8)	537
Girls	17 (27.9)	40 (44.4)	48 (39)	453 (55.2)	558
Total	61 (100)	90 (100)	123 (100)	821 (100)	1095 <sup>b</sup>

<sup>a</sup>  $\chi^2 (3, N = 1095) = 27.40, p = .000$

<sup>b</sup> Two students (0.2%) had missing gender data



**Table 4** Participant role differences in personality, social characteristics, and social anxiety

	Participant role									
	Bullies ( <i>n</i> = 61)		Victims ( <i>n</i> = 90)		Bully/victims ( <i>n</i> = 123)		Uninvolved ( <i>n</i> = 823)		ANOVA ( <i>df</i> = 3, 1093)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>
CU	2.21	.67	2.05	.60	1.93	.51	1.78	.57	17.29	.000
II	2.44	.60	2.20	.54	2.19	.61	1.86	.55	36.09	.000
AE	3.20	.42	3.49	.47	3.31	.46	3.36	.51	4.41	.004
AS	1.28	.42	1.03	.43	1.27	.41	1.07	.43	12.14	.000
SC	0.97	.41	1.14	.33	1.02	.35	1.18	.38	10.52	.000
SA	1.77	.88	2.30	.85	1.68	.89	1.55	.91	19.05	.000

CU callous-unemotional, II impulsive-irresponsible, AE affective empathy, AS assertion, SC self-control, SA social anxiety

are related to an underlying aggressive or antisocial behavior pattern (Bauman et al. 2013; Olweus 2012). As this study replicates, students are most effectively classified based on their behavior (i.e., bullying) and not according to the context of manifestation. Several years ago, while the CB/CV research was on the rise, Olweus (2012) argued that CB has not created new victims and bullies. These findings support Olweus’s claims, since no “pure” cyber victims or cyber bullies emerged from the LPA, but, contrary, results indicated that students exhibit the same behaviors online and offline.

Results showed that boys were assigned the “bully” and “bully/victim” roles more frequently compared to girls, thus verifying that gender is a factor which frequently interferes with students’ involvement in bullying/victimization (e.g., Antoniadou and Kokkinos 2013; Beckman et al. 2013).

Studies investigating factors associated with students’ participation in the incidents, have suggested that both offline bullying/victimization and online bullying/victimization are related to powerful personal and interpersonal characteristics (e.g., Baldry et al. 2015). This study investigated factors that have repeatedly been shown to predict bullying/victimization

behaviors and the respective results were illuminating in describing the psychosocial and emotional profiles of each participating role, and furthermore confirmed that the four roles that emerged are distinct.

Overall, results indicated that “uninvolved” students had the most adaptive psychosocial and emotional profiles, since they achieved the lowest scores in psychopathic traits (callous-unemotional and impulsive-irresponsible) and online disinhibition, and the highest in self-control. These results replicate previous findings, since students who do not participate in bullying and victimization have better control over their behavior (Bossler and Holt 2010) and do not tend to display impulsive and highly disinhibited acts, nor are they distinguished for callousness and unemotionality (Buffardi and Campbell 2008; Stellwagen 2011; Sutton and Keogh 2000).

Contrary, students who exhibited frequent bullying behavior both online and offline (“bullies” group) were the least functional of the sample. It is true that numerous studies in the past have considered bully/victims (and not bullies) as the most dysfunctional participant group, due to their concurrent participation in more than one phenomenon (bullying and

**Table 5** Participant role differences in personality, social characteristics, and psychological symptoms

	Participant role mean rank					<i>p</i>
	Bullies ( <i>n</i> = 61)	Victims ( <i>n</i> = 90)	Bully/victims ( <i>n</i> = 123)	Uninvolved ( <i>n</i> = 823)	Kruskal-Wallis $\chi^2$ ( <i>df</i> = 3, 1093)	
CB	1066.11	655.68	967.80	436.41	569.96	.000
CV	814.34	797.85	813.85	462.54	258.61	.000
TB	884.16	738.52	769.72	470.45	225.99	.000
TV	768.06	1031.74	646.11	465.46	312.98	.000
OD	868.59	684.60	704.67	487.22	139.92	.000
GM	834.84	549.03	711.09	502.92	103.66	.000
CE	383.02	522.93	524.04	567.88	21.09	.000
CO	289.70	528.01	391.97	593.98	88.76	.000
SR	597.14	352.41	611.14	557.64	41.93	.000

OD online disinhibition, GM grandiose-manipulative, CE cognitive empathy, CO cooperation, SR social relations

victimization). But as researchers point out, multiple participation in bullying acts in general and, specifically, simultaneous participation in CB/CV and TB/TV may also be related with a dysfunctional profile (e.g., Gradinger et al. 2009). This may be particularly true for the students who were classified as “bullies” in this study, since they had the highest CB and TB scores, thus revealing a severe involvement. Specifically, they had the highest scores in grandiose-manipulative and callous-unemotional traits, as well as in online disinhibition. All psychopathic traits have been found to be related to bullying among adolescents, and according to some studies, this relationship is more significant in the case of the grandiose-manipulative traits (Peeters et al. 2010). Bullies were not differentiated into online and offline, which confirms previous claims that psychopathic traits are common among cyber and traditional bullies (e.g., Antoniadou and Kokkinos 2013; Antoniadou et al. 2016a). In terms of bullies’ social skills, previous studies have shown that they may lack in some aspects, but not all (Arsenio and Lemerise 2001), and this notion was confirmed since bullies scored high in assertion, and low in both dimensions of empathy, cooperation, and self-control. Albeit assertion is a vital social skill for healthy social relations, some students may use it in an aggressive manner to impose their will and ascertain their rights (e.g., Maccoby 1990). Empathy has repeatedly been found as a predictive factor for students’ involvement in bullying (Jolliffe and Farrington 2006), while previous research has found that bullies lack in both dimensions (Slonje et al. 2012), especially if they employ direct aggression (Woods et al. 2009). Aggressive students that are callous and have low empathy are more likely to have trouble during their social interactions, since they do not exhibit socially responsible behaviors (Bossler and Holt 2010; Dodge et al. 2003). Similarly, results of this study indicated that bullies had poor cooperation, an essential social skill for positive peer relationships (Wentzel 1991) based on mutual understanding, empathy, and altruism (Rilling et al. 2002). Finally, their poor self-control may prohibit them from fully appreciating the social consequences of their actions, while this finding is in line with their highly disinhibited online behavior (Bossler and Holt 2010). Previous empirical evidence indicated that individuals with less self-control are more likely to engage in deviant behavior when opportunity is presented, and such opportunities may be more frequent during online communications (i.e., absence of guardianship).

Students of the “bully” group differed significantly than those classified as “bully/victims” (high scores in CB, TB, and CV), since the latter had lower scores than bullies in grandiose-manipulative and impulsive-irresponsible traits and online disinhibition and higher scores in cognitive empathy. This group of students had lower scores in CB and TB than “bullies,” lower scores in CV than victims, and almost no involvement in TV. Although TV was the most prevalent

phenomenon in this study, most students with high TV scores were classified as “victims,” which may be a more homogenous group than “bullies” and “bully/victims.” Essentially, students classified as “bully/victims” are occasional bullies and cyber victims, which could be attributed to the fact that even though they attempt CB, they do not have equal skills with the “bullies” to avoid counterattacks. Furthermore, “bully/victims” seem more socially functional, since in many characteristics they had similar scores with “uninvolved” students.

Finally, victims had higher affective empathy than the two bully groups, but nevertheless their psychosocial profile was poorer since they had the highest social anxiety and the poorest social relations among all groups. Findings on victims’ empathy have been contradicting, and some researchers have found high scores in this group (Kokkinos et al. 2014; Van Noorden et al. 2013). It has been suggested that high affective empathy does not necessarily help the student prevent or face the negative event. Nevertheless, the victimization incident may increase his/her tendency to share others’ feelings (Almeida et al. 2009; Schultze-Krumbholz and Scheithauer 2009; Van Noorden et al. 2017). Previous studies have highlighted that victims have a poor social profile and these findings replicated that students who experience bullying at school are more likely to get into similar troubles when they connect to the Internet (e.g., Huang and Cho 2010). Elevated social anxiety has repeatedly been found among victims of both CB and TB (e.g., Dempsey et al. 2009; Espelage et al. 2013), since these students frequently make negative self-evaluations and tend to focus on negative aspects of their character and behavior, which contributes to their inability to defend themselves during an attack (Karlen and Daniels 2011; Van den Eijnden et al. 2014). What’s worse is that they send out signals of weakness, which shows to the bully that they present ideal targets (Storch and Masia-Warner 2004). The relation of social anxiety with victimization is bidirectional, since such feelings can become worse after a painful social experience (e.g., Juvonen and Gross 2008; Van den Eijnden et al. 2014). Specifically, students with high social anxiety tend to ruminate on the incident and end up avoiding all social interactions and situations that could potentially lead to the repetition of the victimization (e.g., parties, group activities) (Storch and Masia-Warner 2004). This may be especially true for adolescents who experience multiple victimization, like the students who were classified as “victims” in this study, since they experienced both CV and TV (Storch and Masia-Warner 2004). Finally, the poor social relations found in this group appear to be common to both online and offline victims (e.g., Schoffstall and Cohen 2011), since these students do not have adequate social protection (e.g., a supportive peer group who will standing up for them, or give helpful advice), against attacks that is crucial during adolescence (Flanagan et al. 2008).

The present findings can improve researchers' understanding of bullying and contribute to the ongoing debate regarding the similarities of cyber and traditional forms of bullying/victimization (e.g., Cross et al. 2015). Furthermore, results regarding participants' psychosocial and emotional profiles can assist prevention and intervention efforts (Baldry et al. 2015), which are among the main goals of studying bullying/victimization (Bauman et al. 2013). Students' participation, especially multiple, has serious short- and long-term consequences on a social, emotional, and cognitive level including—but not limited to—low self-esteem, psychosocial problems, depression, and social problems (Cross et al. 2012). Although prevention and intervention programs should be tailored accordingly, the fact that students of this sample were classified into common bullying/victimization roles shows promise for the use of common practices (Cross et al. 2012). Technologically oriented efforts may be important to avert CB/CV incidents, but as various researchers argue and as findings of this study indicate, psycho-educational interventions which consider students' characteristics and address both their online and offline behaviors might be more appropriate (Olweus 2012).

As in any study, this research has several limitations which should be taken into consideration when attempting a generalization of the results. First, this investigation demonstrates student profiles that are limited to the predictors used in the analysis and therefore future studies could investigate other factors as well. One of the major limitations is its cross-sectional nature which does not allow us to draw conclusions regarding causality (e.g., White 1990). Longitudinal as well as mixed studies could attempt to investigate this issue in the future (Cassidy et al. 2013). Also, since the sample of the study was restricted to Greek Junior High school students of North Greece, generalizations cannot necessarily be applied to other geographical regions. Future studies could attempt the replication of results with a larger, more diverse and geographically wider sample. Finally, data collection was based exclusively on anonymous self-report questionnaires, which have a higher risk of subjective, hasty, and socially desirable replies.

In conclusion, this study attempted to advance the existing literature regarding CB/CV and TB/TV participant roles, which is extremely limited, especially in Greece (e.g., Antoniadou and Kokkinos 2015). Overall, the findings indicated that cyber and traditional bullying and victimization participants can be classified into common roles (Cross et al. 2015) and may have very similar psychosocial and emotional profiles (Hinduja and Patchin 2012). The role of powerful factors such as psychopathic traits, social skills, and relations was investigated along with online disinhibition (Allison and Bussey 2016).

## Compliance with Ethical Standards

**Competing Interests** The authors declare that they have no competing interests.

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