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# Cyberbullying victimization prevalence and associations with internalizing and externalizing problems among adolescents in six European countries

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## ARTICLE INFO

## ABSTRACT

Cyberbullying victimization is an important adolescent health issue. The cross-national study aimed to investigate the prevalence of cyber victimization and associated internalizing, externalizing and academic problems among adolescents in six European countries. A cross-sectional school-based study of 14–17 year-old adolescents ($N$ = 10,930; F/M: 5719/5211; mean age 15.8 ± 0.7 years) was conducted in Spain, Poland, the Netherlands, Romania, Iceland and Greece. In total, 21.4% of adolescents reported cyber victimization in the past 12 months. Reports were more frequent among girls than boys (23.9% vs. 18.5%), and among the older adolescents compared to the younger ones (24.2% vs. 19.7%). The prevalence was highest in Romania and Greece (37.3% and 26.8%) and lowest in Spain and Iceland (13.3% and 13.5%). Multiple logistic regression analysis indicated that cyber victimization was more frequent among adolescents using the internet and social networking sites for two or more hours daily. Multiple linear regression analysis showed that externalizing, internalizing and academic problems were associated with cyber victimization. Overall, cyber victimization was found to be a problem of substantial extent, concerning more than one in five of the studied European adolescents. Action against cyber victimization is crucial while policy planning should be aimed at the prevention of the phenomenon.

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## 1. Introduction

As the daily activities of adolescents have shifted online, it is not surprising that bullying victimization, a negative phenomenon that affects the life of numerous children worldwide in school and other environments, has also shifted online. The term *cyberbullying or cyber victimization* has been coined to describe this phenomenon (Brown, Demaray, & Secord, 2014). While cyberbullying has not been conceptualized consistently in the literature so far, it can be broadly defined as "any behavior performed through electronic

or digital media by individuals or groups that repeatedly communicate hostile or aggressive messages intended to inflict harm or discomfort on others" (Tokunaga, 2010, p. 278). This definition includes all of the aspects that most researchers consider to be defining elements of the phenomenon. Specifically, cyberbullying is defined by the medium used, namely various internet applications such as e-mails, chats, instant messengers or social networking sites (SNS), and this is the basic conceptual difference from traditional bullying. Additionally, cyberbullying includes hostile behavior that is perpetrated intentionally and repeatedly (Tokunaga, 2010). Some definitions also include aspects of "imbalance of power" indicating that perpetrators are stronger than their victims (Gradinger, Strohmeier, & Spiel, 2010; Grigg, 2010) although this aspect of cyberbullying is difficult to measure (Dooley, Pyżalski, & Cross, 2009). Another issue frequently debated in the context of cyberbullying is the anonymity of the offender,

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but this cannot be treated as distinctive, as the online offender may also be well known to the victim (Nocentini, Calmaestra, Schultze-Krumbholz, & Scheithauer, 2010; Sticca & Perren, 2013).

Cyber victimization may appear in different forms. The aggression may be direct (e.g., sending insulting messages) or indirect (e.g., spreading rumors or excluding someone from the online peer group) (Dooley et al., 2009). Other classifications include textual or verbal versus visual harassment (compromising photographs or videos). Another specific form of cyberbullying is impersonation in which the offender "steals identity" from the victim and sends messages in his or her name, or destroys the victim's account in an online service (Nocentini et al., 2010).

The prevalence of cyber victimization has been found to vary extensively across measurements and countries (Ybarra, Boyd, Korchmaros, & Oppenheim, 2012). In a review of research, Tokunaga (2010) concluded that 20–40% of adolescents experience cyberbullying at least once in their lifetimes. In Europe, the face of bullying seems to be changing rapidly: in 2010, 7% of children 9–16 years in seven EU countries reported to have been cyberbullied in the last 12 months (Livingstone, Haddon, Görzig, & Ólafsson, 2011). By 2014, the figure climbed to 12% with cyber victimization rates varying across the studied EU counties ranging from a low of 5% in Portugal to a high of 21% in Denmark (Livingstone, Mascheroni, Ólafsson, & Haddon, 2014). In spite of this variation in prevalence across studies, the fact remains that cyberbullying is a serious problem confronting youth today (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). The research study presented here focuses on cyber victimization- a rapidly changing phenomenon.

Significant associations have been reported between cyber victimization and serious mental health issues. Problematic adolescent behaviors, as a clinically relevant phenomenon, have been generally defined according to two dimensions, the externalization and internalization of problems (Achenbach, 1966, 1991). Typical examples of externalizing problem behaviors include aggressiveness and juvenile delinquency. In contrast, internalizing behavior problems may include social withdrawal, anxiety, depression and somatic complaints (Achenbach, 1991). A number of cross-sectional studies in recent years have investigated the relationship between cyber victimization and internalizing difficulties, such as loneliness and depressed mood (Kowalski & Limber, 2007; Olenik-Shemesh, Heiman, & Eden, 2012). Klomek, Marrocco, Kleinman, Schonfeld, and Gould (2008) examined the relationship between various forms of victimization (including being bullied by email or the internet) and depression, suicidal ideation and suicide attempts among 2342 American adolescents. Compared to non-victimized students, those who were bullied online had an increased risk of depression and suicidality. In another study, victims of cyberbullying reported the highest levels of depression in comparison to cyber bullies and individuals who were both bullies and victims (Wang, Nansel, & Iannotti, 2011). Furthermore, increased social anxiety has been found among adolescents who have been bullied online (Juvonen & Gross, 2008).

In addition to the association with internalizing problems, cross-sectional studies of cyber victimization also report an association with concurrent externalizing difficulties such as conduct problems (Hinduja & Patchin, 2008, 2012; Juvonen & Gross, 2008; Kowalski & Limber, 2013; Mishna, Cook, Gadalla, Daciuk, & Solomon, 2010; Raskauskas & Stoltz, 2007; Smith et al., 2008; Sourander et al., 2010; Ybarra, Diener-West, & Leaf, 2007; Ybarra, Mitchell, Wolak, & Finkelhor, 2006). For example, in a population-based study of Finnish adolescents, Sourander et al. (2010) found that cyberbullying victimization was associated with behavior problems with peers. Research also shows that victims are at higher risk for school problems (e.g., suspension, truancy, cheating) and other deviant behaviors (e.g., drug and alcohol abuse) (Patchin & Hinduja, 2013). Some evidence is available on the long-term impact of cyberbullying on internalizing and externalizing symptoms, but it is scarce, based on a few longitudinal studies carried out in Europe. For example, Schultze-Krumbholz, Jäkel, Schultze, and Scheithauer (2012) in Germany showed that scoring high in cyber victimization led to increases in loneliness for boys, while for girls it predicted increases in reactive aggression. Similarly, Gámez-Guadix, Orue, Smith, and Calvete (2013) analyzed the temporal relationships between being a victim of cyberbullying and depressive symptoms among Spanish adolescents, and found reciprocal relationships: victimization predicted depressive symptoms, and depressive symptoms in turn increased the probability of cyber victimization. This suggested that a vicious circle might best capture the relationship between cyber victimization and psychosocial problems.

Evidence further shows that bullying may affect the academic work of victims. Bullied children are more likely than non-bullied peers to report truancy (Katzer, Fetchenhauer, & Belschak, 2009), higher absenteeism rates (Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004), and poorer grades (Beran & Li, 2007). In a meta-analytic review, Nakamoto and Schwartz (2010) found a significant negative association between victimization and academic achievement, as measured by grades, student achievement scores, or teachers' ratings of academic achievement.

As outlined above, research has examined the links between victimization through cyberbullying and several internalizing and externalizing difficulties as well as academic problems. Despite these contributions, there are still many questions that need to be addressed in detail. At present, no multi-national epidemiological survey assessing cyber victimization on the basis of large probability samples is available. It is necessary to increase knowledge about the distribution of cyber victimization across ages, gender and counties, and its relationship with emotional, behavioral, and academic problems. It has been previously suggested that the effect of cyber victimization on depressive symptoms may be culturally independent (Perren, Dooley, Shaw, & Cross, 2010), but this has not been explored across European counties. To this purpose, the EU NET ADB project (Tsitsika et al., 2012) was conducted with the aim of further extending this body of research by investigating, via consistent methodological procedures across six countries, whether falling victim of cyberbullying is associated with both internalizing and externalizing difficulties. The aim of the present paper is threefold: first, to examine exposure to cyber victimization among adolescents in six European countries by determining what proportion of adolescents had experienced cyberbullying during the preceding year; second, to examine the factors associated with cyber victimization; and third to determine whether cyber victimization contributes to the prediction of internalizing, externalizing and academic difficulties among adolescents, and whether the effect is culturally moderated.

## 2. Method

### 2.1. Participants and procedure

A cross-sectional school-based study was conducted in seven countries participating in the EU NET ADB study: Spain, Poland, Germany, the Netherlands, Romania, Iceland and Greece. These countries were selected to represent the economic, geographic and cultural diversity of European countries. Data collection took place from October 2011 to May 2012. Germany was excluded from the present analyses because, owing to difficulty in obtaining permission to administer a clinical questionnaire, its data did not include the scale assessing emotional and behavioral problems. The study protocol was approved by the respective Ethical