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Student bystander behavior and cultural issues in cyberbullying: When actions speak louder than words



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ABSTRACT

This study aims to investigate whether student bystander interventions can influence the relationship between being a bystander of a cyberbullying incident and being the victim or the aggressor. Another aim is to understand the specific behavior presented by students bystanders, namely whether they noticed incidents of cyberbullying and interpreted these events as an emergency and which actions they determined as being appropriate in providing assistance. Following a cross-cultural perspective to reach these aims, a total of 788 Portuguese and Brazilian college students answered to the Cyberbullying Inventory for College Students. Moderation analysis revealed that intervening moderated the relationship between being the bystander of cyberbullying and being the victim and/or aggressor. A three-way interaction showed that this relationship was stronger in Brazilian students, revealing that the bystanders who were inactive were more likely to also become a victim or an aggressor themselves, whereas those who intervened were less likely to become a victim or an aggressor. Implications for future research and interventive action are discussed.

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1. Introduction

Students and schools have been facing new challenges since life no longer occurs only in the physical world, but in the virtual world as well, leading individuals towards ethical issues regarding their own digital footprint. With this regard, cyberbullying is a current global phenomenon that has been defined as individuals' intentional repeated acts of aggression towards others through the use of various means of technology (Belsey, 2006). This has been an emerging construct which is yet to be fully explored, carrying important implications for society, educational settings and its stakeholders (Francisco, Simão, Ferreira, & Martins, 2015). Despite these implications, the literature on Cyberbullying has presented few contributions regarding the bystanders' role within the phenomenon (Machácková, Dedkova, Sevcikova, & Cerna, 2013). The present study is a call from previous research (Barlińska, Szuster, & Winiewski, 2013) to investigate how bystanders can have an impact

on how incidents of cyberbullying unfold and thus influence the lives of many individuals. With an important basis on Latane and Darley (1970) bystander model of the bystander effect, the current study extends previous findings (e.g. Dillon & Bushman, 2015) by presenting a new approach on the relationship between being a bystander and experiencing victimization and aggression. Moreover, as far as we know, this is one of the few studies that integrates a multicultural approach to how bystanders in particular behave in these contexts, as recommended in the literature (Baek & Bullock, 2014; Del Rey et al., 2015; Machácková et al., 2013; Ortega, Elipe, & Calmaestra, 2009).

Research has shown that bystanders have an increasingly important role in cyberbullying, since they can be many due to the global impact of the Internet (Ball, 2007; Kraft, 2011). For Francisco and colleagues (2015), studying bystanders and their behavior towards cyberbullying is important for understanding the phenomenon in order to take evidence-based measures towards its resolution. Due to its gravity and complex nature, cyberbullying needs to be approached with empirically validated guidelines for intervention and prevention (Del Rey et al., 2015; Hinduja & Patchin, 2008; Walrave & Heirman, 2011). Moreover, since individuals who experience cyberbullying are at a greater risk of

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experiencing negative emotions than individuals who experience traditional bullying, the importance of dealing with this phenomenon is increased (Gimenez-Gualdo, Hunter, Durkin, Arnaiz, & Maquilón, 2015). Furthermore, since the number of bystanders in cyberbullying is much larger than in bullying, more research is needed to understand the specific characteristics of these individuals (Na, Dancy, & Park, 2015).

In this study, we investigated whether student bystander intervention can influence the relationship between being a bystander of a cyberbullying incident and being the victim or the aggressor. We aimed to understand whether the probability of these roles overlapping is somehow influenced by whether individuals try to intervene. Moreover, since cyberbullying is a worldwide phenomenon, we aimed to understand whether cultural aspects may influence this relationship as well as the specific behavior presented by bystanders. To be precise, whether they noticed incidents of cyberbullying and interpreted these events as an emergency and which actions they determined as being appropriate in providing assistance. We argue that this study may provide an important contribution to the field of investigating cyberbullying because it focuses on the role of bystanders from a cross-cultural perspective and on how they may become a victim or an aggressor themselves, depending on whether or not they take action.

In the following sections, we present the theoretical framework that enabled us to formulate the hypotheses. Then, we present the moderation analyses that allowed us to conclude that bystanders who intervene, are less likely to become a victim or an aggressor themselves, and that there are cultural differences in how this behavior unfolds.

1.1. Bystander behavior in cyberbullying and hypotheses

Cyberbullying aggressions may remain online for extended periods of time and may be accessed frequently at any time by the victims and their schoolmates (Dooley, Pyzalski, & Cross, 2009). Hence, the number of bystanders can gradually increase, prolonging and increasing the victims' distress (Kubiszewski, Fontaine, Potard, & Auzoult, 2015). Furthermore, the reactions of victims may influence others' behavior (Ortega et al., 2009) and create opportunities for the bystanders to experience feelings of empathy and/or remorse (Slonje & Smith, 2008; Sokol, Bussey, & Rapee, 2015).

The roles in cyberbullying may sometimes overlap because some victims of cyberbullying may also bully others (Dehue, 2013; Völlink, Bolman, Dehue, & Jacobs, 2013). In fact, research has found that there is an interaction between the experience of being the aggressor and that of being the victim (Walrave & Heirman, 2011; Ybarra & Mitchell, 2004). Victims of cyberbullying may experience feelings of helplessness and isolation which may prompt them to sustain behavior of aggression and feelings of anger and/or revenge towards their aggressor or other people (Ak, Ozdemir, & Kuzucu, 2015; Barlińska et al., 2013). The dynamics of the relationships between the experience of being an aggressor or the victim of cyberbullying could thus influence bystanders' behavior (Barlińska et al., 2013).

Knowing how to react as a bystander of cyberbullying is different from being a bystander of traditional bullying. Inactive behavior online may be to some degree positive since it can prevent the dissemination of negative posts or messages and thus, prevent the expansion of the incident to other bystanders (Barlińska et al., 2013).

How bystanders behave within the context of cyberbullying may depend on numerous social aspects, such as the bystander effect, defined by Darley and Latane (1968) as a psychological

phenomenon that occurs in individuals in severe situations where they do not help the victim, specifically because the presence of others hinders them from intervening. The bystander effect could be attributed to the diffusion of responsibility (the more bystanders there are, the less responsible each individual feels) and social influence (bystanders monitor the behavior of other bystanders to determine how to act). Latane and Darley developed and tested the Bystander Intervention Model (1970) to understand whether and how bystanders choose to intervene in emergency incidents. This model consists of five steps, including (1) noticing that something has occurred, (2) interpreting whether the event is an emergency situation, (3) taking personal responsibility in intervening, (4) determining appropriate action, and lastly, (5) providing assistance.

In cyberbullying in particular, the fact that communication is mediated by digital devices, individuals gain a sense of online anonymity, making them more susceptible to bystander behavior that is not pro-social (McKenna & Bargh, 2000). In fact, online interaction enables deindividuation – a loss of self-awareness in groups (Festinger, Pepitone, & Newcomb, 1952) and a decrease in the sense of responsibility (McKenna, 2008), which in turn, may lead to Internet disinhibition (Joinson, 1998), consisting of the loss of self-control in social behavior and interaction (Suler, 2004).

In an experimental study, Dillon and Bushman (2015) studied the first step of Latane and Darley (1970) Bystander Intervention Model in a virtual environment. The authors found that noticing a cyberbullying incident significantly predicted whether the bystanders intervened directly or indirectly. Thus, Dillon and Bushman (2015) posited that more research is needed to investigate how the Bystander Intervention Model as a whole can provide a deeper understanding of how bystanders behave in the virtual world. Since the authors only focused on the first step of the model, we used the whole model for the current study to fully understand how intervention may occur.

Authors such as Barlińska et al. (2013) aimed to identify variables that could influence bystander behavior in incidents of cyberbullying. The authors posited that the characteristics of online interaction may trigger impulsive behavior and increase the tendency for bystander behavior to sustain cyberbullying aggressions. Hence, they found that negative bystander behavior was more prone to occur in online interaction than in face-to-face contact, and that bystander behavior was significantly influenced by previous experiences of cyberbullying. Lastly, they found that negative bystander behavior tends to decrease when bystanders empathize with the victim's pain in incidents of cyberbullying. Other authors, such as Batson et al. (1997) and Galinsky, Ku, and Wang (2005) had also studied and confirmed the importance of cognitive empathy in reducing negative behavior. Nonetheless, Barlińska et al. (2013) measured cyberbullying bystander behavior in a specific Internet environment, namely through an instant messenger simulation, thus limiting the possibility of predicting how participants would respond in different Internet settings. In our study, we required participants to consider all of the potential Internet settings in which the cyberbullying incidents occurred.

Some of the literature highlights that bystanders may have distinct behaviors (Carter, 2013). These behaviors may be proactive in favor of the victim, where support to the victim is offered, by contacting and defending them directly (Hawkins, Pepler, & Craig, 2001), by responding directly to the aggressor (Pozzoli & Gini, 2010), and also, by enabling the diffusion of information regarding possible interventions. Bastiaensens et al. (2015) studied bystanders' behavioral intentions and examined how the contextual variables of the (cyber)bullying incident (severity, identity, and behavior of other bystanders) influenced the type of interaction and privacy of bystanders' intentions to help. The authors found

that bystanders demonstrated higher behavioral intentions to help the victim in private, online and that the severity of the incident influenced the mediacy of their intentions to help. Thus, the authors mentioned that a shortcoming was the fact that they focused on intentions, as opposed to real facts. We tried to overcome this limitation by focusing on real incidents of cyberbullying where the bystanders intervened or not.

This study aimed to provide a better understanding of whether intervening as a bystander can influence the relationship between being a bystander of a cyberbullying incident and being the victim or the aggressor. Specifically, we aimed to understand whether the probability of these roles overlapping is somehow influenced by whether individuals intervene. We also aimed to understand the specific behavior presented by bystanders, in terms of whether they noticed incidents of cyberbullying, interpreted these events as an emergency and which actions they determined as being appropriate in providing assistance. Hence, considering a) the possibility of overlapping roles of being a bystander who notices an incident of cyberbullying and a victim or an aggressor; and b) the importance of taking personal responsibility and intervening as mentioned in Latane and Darley's Bystander Intervention Model (1970), we hypothesize that:

Hypothesis 1a. *Intervening could influence the relationship between being a bystander who notices an incident of cyberbullying and being a victim.*

Hypothesis 1b. *Intervening could influence the relationship between being a bystander who notices an incident of cyberbullying and being an aggressor.*

1.2. Cultural differences in bystander behavior in cyberbullying and hypotheses

In the same way that diversity is present in different cultures, so are the diverse meanings that culture may have. Accordingly, for the current study culture is defined as a cluster of values that are adopted by a group of people that defines their way of life and that distinguishes one society from another (Dickson, Castaño, Magomaeva, & Den Hartog, 2012). This study was framed within Hofstede (2001) cultural constructs of individualism and indulgence in order to compare cultural differences between Brazil and Portugal with regards to potentially different bystander behavior in incidents of cyberbullying. Moreover, we considered the prevalence of violence within each of these countries as important indicators of aggressive behavior.

Brazil and Portugal possess similar cultural identities since they are both Lusophone countries and share the same language (e.g., Portuguese). They do differ, however, with regards to aspects such as individualism and indulgence. Regarding individualism, Brazil is rated at 38 and Portugal at 27, meaning that although both countries present low levels, Portugal reveals a more collectivist society than Brazil. As for indulgence, Brazil presents a high score of 59, making it therefore a more indulgent society, whereas Portugal exhibits a low score of 33 which implicates it as a culture of restraint (Hofstede, 2001).

We opted to consider individualism because it refers to the level of interdependence a society sustains among its members, namely regarding whether individuals' self-image is delimited in terms of "I" or "we". In individualistic societies, individuals usually take care of themselves and their immediate family only, whereas in collectivist societies individuals are loyal to a group that looks after them, and where individuals take responsibility for other members of their group. Also, an offence in collectivist societies often leads to shame and humiliation. Individualistic societies present a lower

level of group cohesion between its members, whereas collectivist societies present a greater integration and cohesion between members of the group (Hofstede, 2001). Furthermore, the behavior of people within a collectivist society is primarily regulated by the desire to conform to the group's norms (Hofstede, 2001; Triandis, McCusker, & Hui, 1990). We argue that this construct may provide a better understanding of how bystanders of cyberbullying behave within these two different societies because taking responsibility for intervening in an incident also involves values of collectivism. For example, a recent study with Chinese, Polish and American students revealed that the level of individualism-collectivism is associated with direct and indirect aggression (Forbes, Zhang, Doroszewicz, & Haas, 2009). Specifically, the study indicated that for both types of aggression, the higher the individualism, the greater the tendency towards aggressive behavior. These results suggest that this aspect is intricately related to the role of bystanders. However, it is also likely that if a specific group of individuals conforms to non-prosocial behavior online, than those members of that group abide by that same behavior (Oyserman, Sakamoto, & Lauffer, 1998).

Nesdale and Naito (2005) conducted a study regarding students and their preferences based on the society they were inserted in. Their results revealed students in collectivist cultures sought to form groups and establish friendships based on common characteristics, such as ethnic background and age. However, students in more individualistic countries socialized with other individuals based on the nature of the tasks they performed in class, as well as on their abilities, notwithstanding the fact that they enforced their individual points-of-view in their social interactions.

The level of indulgence was also considered in this study, since it refers to the degree with which individuals attempt to control their desires and impulses, based on how they were raised. As low levels of control are considered indulgence, high levels of control are considered restraint (Hofstede, 2001). In indulgent societies individuals are motivated to act on their impulses and desires related to having fun. Individuals thus show a positive attitude and are usually optimistic. Accordingly, they attribute more importance to leisure time, act at their own will and spend money as they desire. Societies with a low score in indulgence tend to demonstrate more cynicism and/or pessimism. Furthermore, individuals in societies that are considered to be more restrained do not give priority to leisure time. Individuals in more restrained societies tend to perceive their actions as being wrong according to the social norms of their society. We argue that this construct is important to understand whether and how bystanders intervene in incidents of cyberbullying and the possible differences between countries in terms of how they control or do not control their behavior online.

As previously reviewed, the incidence, prevalence, and meaning of bullying behaviors may vary from one cultural context to another (Crystal, 1994). Moreover, culture plays a critical role in individuals' aggressive behavior (Li, 2008). Thus, understanding the nature and extension of the specific type of behaviors in different societies and cultures, including multicultural societies, has important implications regarding the ways in which the phenomenon is dealt with (Nabuzoka, 2003).

A recent study developed by Pozzoli, Ang, and Gini (2012) examined the behavior of Italian and Singaporean students, and Nesdale and Naito (2005) investigated Australian and Japanese students. In both studies revealed that there are cultural influences in the attitudes of bystanders with regards to helping victims. For instance, Japanese students were less likely to help victims when they had some type of connection with the aggressor (Nesdale & Naito, 2005). On a similar note, Peluchette, Karl, Wood, and Williams (2015) studied the impact of personality on risky SNS practices in Australian and American young adults. The authors

found that the first were more prone to engage in risky social networking practices and experience different forms of cyberbullying than the latter perhaps because of their diverging attitudes toward profanity and negative perceptions of others. These results suggest that intercultural studies have the potential to improve the scientific community's understanding of (cyber)bullying and to provide an empirical basis for anti-(cyber)bullying programs in different cultural contexts (Pozzoli et al., 2012).

In terms of violence, although Brazil and Portugal present considerably different population rates, Brazil shows higher levels of violence among young adults and adolescents than Portugal. For instance, according to UNESCO's official report regarding the map of violence among young adults and adolescents (Waiselfisz, 2008), Brazil presented an index of 51.6% of homicide rates and 44.2% of deaths by firearms in 2005, whereas Portugal presented an index of 1.7% of homicide rates and 2.0% of deaths by firearms. In a recent study that focused on Portuguese university students for example, Francisco et al. (2015) found that many of the bystanders of victims underrated their involvement in incidents of cyberbullying. This finding can be better understood if we consider Portugal as a restrained country, as mentioned previously. Nonetheless, those who did report their involvement as bystanders, tried to understand the gravity of the situation (24.2%), support the victim (44.5%) and advise the victim to tell someone trustworthy (21.6%). Thus, considering Brazil has a more indulgent and individualistic society and presents higher levels of violence, this study also aimed to understand whether cultural aspects may influence the relationship between being a bystander who notices an incident of cyberbullying and being the victim or the aggressor. Therefore, we hypothesize that:

Hypothesis 2a. *Brazilian students who notice incidents of cyberbullying will more likely experience the role of being the victim than Portuguese students.*

Hypothesis 2b. *Brazilian students who notice incidents of cyberbullying will more likely experience the role of being the aggressor than Portuguese students.*

As cyberbullying is at a global scale, there is an increasing importance to plot its incidence worldwide and understand the divergences between countries that may be affecting its prevalence (Li, 2008). The need for research to investigate and validate assessment tools that can accurately map out the cyberbullying phenomena and its antecedents is therefore crucial (Barlett et al., 2014). Previous research has made it clear that the role of the bystander must be further investigated, since they may be an important key to the resolution of many digital conflicts (Francisco et al., 2015). Accordingly, the bystander effect may influence whether and how bystanders intervene (Latane & Darley, 1970) even in cyberbullying (Dillon & Bushman, 2015), especially because of the distance that online interaction creates between the bystander and the victim and aggressor (Barlińska et al., 2013). Hence, we wanted to meet these current challenges in investigating cyberbullying and present this study as an important contribution to the field of cyberbullying. Thus, this study focuses on the role of bystanders, who may or may not become the victim or the aggressor themselves depending on whether they take action or not from a cross-cultural perspective.

In order to test hypotheses 3a and 3b, we considered the potential overlapping roles of being a bystander who notices an incident of cyberbullying and being the victim or the aggressor. We used the Bystander Intervention Model (Latane & Darley, 1970) as a theoretical model. As previously reviewed here, research shows Portugal is a restrained country, less individualistic (Hofstede, 2001) and with less violence among young adults and

adolescents (Waiselfisz, 2008) as opposed to Brazil, which is more individualistic as an indulgent society (Hofstede, 2001) and has higher levels of violence (Waiselfisz, 2008). Therefore, we hypothesize that:

Hypothesis 3a. *Bystanders who notice incidents of cyberbullying will more likely experience the role of being the victim under the condition of no intervention, as opposed to intervening, but mainly among Brazilian students.*

Hypothesis 3b. *Bystanders who notice incidents of cyberbullying will more likely experience the role of being the aggressor under the condition of no intervention, as opposed to intervening, but mainly among Brazilian students.*

Below we present the conceptual model behind the hypotheses we present (see Fig. 1).

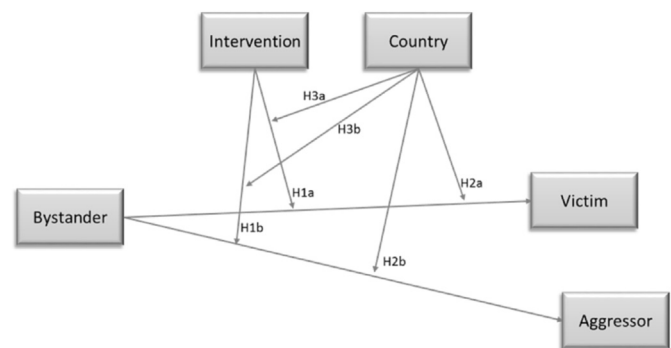


Fig. 1. The effect of intervention and the country of origin on the relationship between being a bystander who notices an incident of cyberbullying and being a victim or an aggressor.

2. Method

2.1. Participants

A total of 788 University students distributed in four age groups took part on this study, 43.4% of individuals were 20 years of age or less, 23% were between 21 and 23 years of age, 8% were between 24 and 26, and lastly, 25.5% were over 26. From the total sample, 65.9% were Portuguese and 34.1% were Brazilian. These students were from vast academic areas, including Psychology (54.9%), Science Education (15.9%), Sociocultural Animation (2%), Basic Education (2.7%), Nursing (7.6%), Journalism (6%), Social Service (3.3%) and Pedagogy (7.6%). We found no significant differences ($p > .05$) between Portuguese and Brazilian students regarding age, gender and academic background.

2.2. Instrument

The Cyberbullying Inventory for College Students – CICS (Francisco et al., 2015) is an inventory about the type and degree of involvement in cyberbullying. The inventory requires participants to remember the last cyberbullying incident they experienced or witnessed. We used 3 scales from this inventory, including a scale for victims (9 items), for aggressors (8 items), and for bystanders (9 items). Participants respond on a scale from 1 (**never**) to 3 (**many times**). Examples of items include “They threatened me”; “I spread rumors about someone’s life”; and “They used someone’s image without authorization”. The items of each scale were developed in several steps, including their initial development based on the

responses given by university students in semi-structured interviews, as well as on definitions and characterizations of cyberbullying provided by the literature (Belsey, 2006; Hinduja & Patchin, 2009; Li, 2006; Willard, 2005). Then, the items underwent content and facial validation through a qualitative methodology, such as interviews to eliminate possible ambiguities in item interpretation. An exploratory factor analyses was also conducted to understand the internal structure of each scale, and an Item Response Theory approach was adopted to verify the unidimensionality of the instruments (see Francisco et al., 2015, for a more detailed description of item development). The CICS also includes questions inquiring about who can help deal with these incidents and which coping strategies may be used. Moreover, the inventory also asks about the emotions involved and the motives of the aggressor, as well as the coping strategies used by victims and bystanders.

2.3. Procedures

We used a self-report measure because it provided us with information about the subjective experiences of participants as victims, perpetrators, and bystanders in incidents of cyberbullying (Graham, Bellmore, & Juvonen, 2003). The participants of this study included students from Brazil and Portugal since these countries are geographically and culturally different (Kulkarni et al., 2011), but share the same language (e.g., Portuguese). Both countries present a growing concern regarding cyberbullying issues among adolescents and young adults (Francisco et al., 2015; Mascarenhas & Martínez, 2011) and display low levels of individualism, but Brazil has a score of 38 and Portugal 27, making Portugal a more collectivist society than Brazil (Hofstede, 2001).

Participants were asked to complete the CICS (Francisco et al., 2015), an anonymous online inventory about the type and degree of involvement in cyberbullying. The instrument was administered individually in the participants classrooms by a member of our research team who was present at all times to ensure that doubts were cleared and to reassure participants that psychological assistance was available during or after they filled in the inventory.

2.4. Measurement model and common method variance

We used the Harman's single-factor test to control the potential common method variance because of the self-reported measures used in this study. Thus, there is common method variance if a single-factor is extracted (Podsakoff, Whiting, Welsh, & Mai, 2013). To conduct this test, the bystanders, victims, and aggressors' scales were loaded into a confirmatory factor analysis. As expected (see Table 1), a three factor-model (e.g., victims, aggressors, and bystanders) [$\chi^2_{(302)} = 1076.307, p < 0.01, \chi^2/df = 3.564, CFI = .924, IFI = .925, RMSEA = .057, LO = .053, HI = .061$] provided better fit indices than a single-factor model [$\chi^2_{(325)} = 6266.682, p < 0.01, \chi^2/df = 19.282, CFI = .418, IFI = .420, RMSEA = .153, LO = .149, HI = .156$], thus revealing no common method variance. This finding corroborated the three distinct constructs that were being measured.

Table 2 presents the construct reliability of the study variables, the convergent and the discriminant validity of the measures. The composite reliability scores were equal to or higher than .80 (Hair, Black, Babin, & Anderson, 2010) for each of the three dimensions. The Average Variance Extracted (AVE) was close or higher than 0.50, and the AVE for the three dimensions was greater than the variance shared with the remaining constructs, hence supporting convergent validity (Henseler, Ringle, & Sinkovics, 2009). Moreover, our findings also confirm the variables' discriminant validity with all of the Average Shared Variance (ASV) scores below the AVE score (Hair et al., 2010).

Table 1
Factor loadings.

	Factor 1	Factor 2	Factor 3
<i>Victims' scale</i>			
Item 1	.56		
Item 2	.49		
Item 3	.78		
Item 4	.51		
Item 5	.81		
Item 6	.86		
Item 7	.65		
Item 8	.64		
Item 9	.41		
<i>Aggressors' scale</i>			
Item 1		.49	
Item 2		.49	
Item 3		.62	
Item 4		.64	
Item 5		.67	
Item 6		.65	
Item 7		.58	
Item 8		.61	
Item 9		.58	
<i>Observers' scale</i>			
Item 1			.65
Item 2			.59
Item 3			.84
Item 4			.56
Item 5			.78
Item 6			.78
Item 7			.82
Item 8			.85
Item 9			.71

Table 2
Measurement model.

Country	Variables	CR	AVE	MSV	ASV
Portugal	1 Aggressors	.86	.41	.03	.01
	2 Victims	.86	.43	.04	.03
	3 Bystanders	.91	.54	.04	.02
Brazil	1 Aggressors	.80	.32	.26	.18
	2 Victims	.85	.41	.26	.18
	3 Bystanders	.93	.58	.10	.10

Note. CR = Construct Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance; ASV = Average Shared Variance.

3. Results

In this section, we present a descriptive analysis and zero-order correlations between the variables (see Table 3). Results for the general sample revealed a positive significant correlation between all of the variables (i.e., aggressors, victims and bystanders). Thus, intervening is positively correlated with the victims ($r = .16, p < .01$) and bystanders ($r = .20, p < .01$) variables. Additionally, the variable country is also positively related to both aggressors and victims (both, $r = .13, p < .01$) meaning that Brazilians report more behavior of both aggressors and victims. The Portuguese and Brazilian subsamples show a different pattern. In sum, in the Brazilian subsample the studied constructs (i.e., aggressors, victims and bystanders) have a high significant correlation. As for the Portuguese subsample, intervening shows a positive correlation with victims and bystanders (both, $r = .23, p < .01$). However, there is no association between intervening and the victims of the Brazilian subsample.

3.1. Structural invariance

We also studied measurement invariance to test the construct validity across the studied samples (Portugal vs. Brazil). The

Table 3
Means, standard deviations and correlations.

General sample (n = 787)								
	M	SD	1	2	3	4		
1. Intervening ^a	1.27	.44	–					
2. Country ^b	1.34	.47	.01	–				
3. Aggressors	1.05	.14	.01	.23**	–			
4. Victims	1.18	.30	.16**	.23**	.32**	–		
5. Bystanders	1.16	.35	.20**	.04	.19**	.22**	–	

Portugal and Brazil country sample ¹								
	Portugal		Brazil		1	2	3	4
	M	SD	M	SD				
1. Intervening ^a	1.27	.44	1.28	.45	–	–.03	.05	.13*
2. Aggressors	1.13	.26	1.28	.35	.04	–	.40**	.26**
3. Victims	1.14	.35	1.18	.36	.23**	.15**	–	.33**
4. Bystanders	1.27	.44	1.28	.45	.23**	.13**	.15**	–

**p < .01; *p < .05.

Notes. ¹ Portugal below the diagonal (n = 518) and Brazil above the diagonal (n = 269); ^a 1 – No, 2 – Yes; ^b 1 – Portugal, 2 – Brazil.

Table 4
Structural invariance of variables across samples.

		X ²	df	X ² /df	Contrasts	ΔX ²	TLI	CFI	ΔCFI	RMSEA [LO; HI]
Portugal vs. Brasil	Model 1	1462.835	604	2.422	–	–	.910	.922	–	.043 [.040; .045]
	Model 2	1570.381	628	2.501	2 vs. 1	107.546	.905	.915	.007	.044 [.041; .046]
	Model 3	1661.715	631	2.633	3 vs. 2	91.334	.896	.907	.008	.046 [.043; .048]

Notes. Model 1 = Configural invariance; Model 2 = M1 + Measurement weights invariance; Model 3 = M2 + Structural covariance invariance.

literature (Hair et al., 2010) recommends testing the measurement invariance as an assumption to study moderation effects in order to ensure the equivalence of the constructs for both countries of the moderator variable.

In the previous section, we found that a three-factor model (Aggressors, Victims and Bystanders) was the model that best fit the data. We then computed a Multi-Group Confirmatory Factor Analysis (MGCFA) to test the structural invariance of students from schools belonging to countries with different cultural backgrounds, while sharing the same language. We were able to assess the measurement invariance by using the same factorial structure across different groups and to test fitted models with incremental invariance properties with the MGCFA. Also, we used changes in CFI (ΔCFI) values to compare nested values. As the models became more restrictive (Table 4), ΔCFI < .01, we expected that the data fit would not change substantially (Cheung & Rensvold, 2002). At first we proceeded to find a fit model considering the AMOS modification indices and the covariances between errors within the same construct and considering all of the theoretical requirements. This procedure enabled us to run our initial model (Model 1), in which no constraint was imposed across the studied subsamples (Portugal vs. Brazil). Constraining the measurement weights variance to be equal in both groups (Model 2) did not decrease the fit for the Portuguese vs. Brazilian subsamples (ΔCFI = .007). When constraining the structural covariance invariance to be similar (Model 3), the CFI was still unaffected for the Portuguese vs. Brazilian subsamples (ΔCFI = .008). These results support the structural invariance for the Portuguese and Brazilian subsamples.

3.2. Hypotheses testing

We used the PROCESS macro for SPSS (Hayes, 2013) to test the three-way moderation hypotheses. We used hierarchical regression analyses to test the hypotheses. First, we aimed to test whether intervening could influence the relationship between being a

bystander who notices an incident of cyberbullying and being a victim (H1a) or an aggressor (H1b). Second, and considering the cultural aspects, we aimed to test whether the Brazilian bystanders (contrarily to the Portuguese bystanders) who noticed an incident of cyberbullying were more likely to become a victim (H2a) or an aggressor (H2b). Lastly, we tested whether the Brazilian bystanders (contrarily to the Portuguese bystanders) who noticed an incident of cyberbullying but did not actively intervene tended to become victims (H3a) and aggressors (H3b).

3.2.1. Two-way interactions

Table 5 presents the results of the two-way and the three-way interaction regression analyses. Considering the two-way interaction and specifically the victims and aggressors as a dependent

Table 5
Combined regression results with intervening and the country as moderator: Standardized regression coefficients.

	Victims		Aggressors	
	β	s.e.	β	s.e.
Constant	1.19**	.01	1.05**	.00
1. Intervening ^a	.10**	.02	.00	.01
2. Country ^b	.15**	.02	.07**	.01
3. Bystanders	.18**	.03	.08**	.01
Interactions:				
4. Bystanders X Intervening	–.22**	.06	–.07*	.03
5. Bystanders X Country	.26**	.06	.11**	.03
6. Bystanders X Intervening X Country	–.39**	.12	–.14*	.06
FullModel R ²	.11		.16	
F	14.03**		20.82**	
ΔR ² increase due to three-way interaction	.010		.010	
F (1,df2)	5.37**		9.60**	

**p < .01; *p < .05.

Notes

^a 1 – No, 2 – Yes.

^b 1 – Portugal, 2 – Brazil.

variable, and the interaction between intervening and being a bystander who noticed an incident of cyberbullying is significant, $\beta = -.22, p < .001$ and $\beta = -.07, p < .05$, respectively. This evidence supports [hypotheses 1a](#) and [1b](#). Also, as shown in [Table 5](#), being a bystander moderated the positive relationships of country for both victims ($\beta = .26, p < .001$) and aggressors ($\beta = .11, p < .001$), with the relationships being stronger for students from Brazil. This evidence supports [hypotheses 2a](#) and [2b](#).

3.2.2. Three-way interactions

Considering the victims as a dependent variable, the three-way interaction of intervening, country, and being the bystander was significant, $\beta = -.39, p < .001$, explaining an additional 1% of the variance $F(1,779) = 9.60, p < .001$. The pattern is presented according to [Aiken and West \(1991\)](#) in [Fig. 2](#).

For Portuguese students who intervened, the tendency to become victims was not significant ($\beta = .03, p = .56$). However, those Portuguese bystanders that did not intervene, tended to become more victims ($\beta = .11, p = .02$). The effect of the slopes for Brazilian bystanders show that students who did not intervene tended to become more victims ($\beta = .47, p < .01$) than the Portuguese subsamples. The effect verified in Brazilian bystanders who tried to intervene practically null, indicating that there was no tendency for them to become victims ($\beta = .01, p = .95$). The difference between the slopes was significant ($t = -3.10, p < .01$). In sum, Brazilian bystanders who noticed an incident of cyberbullying but did not intervene, tended more to become victims than Portuguese bystanders. These results support [Hypothesis 3a](#).

Next, we considered being an aggressor as a dependent variable and the interaction between intervening and being a bystander who noticed an incident of cyberbullying, which was significant, $\beta = -.07, p < .001$. Also, considering being an aggressor as a dependent variable, the interaction between the country of origin and being a bystander was significant, $\beta = .11, p < .001$. With being an aggressor as a dependent variable, once again the three-way interaction: intervening, country, and being a bystander was significant, $\beta = -.39, p < .001$, explaining an additional 1% of the variance $F(1,779) = 5.37, p = .02$. The plots are displayed in [Fig. 3](#).

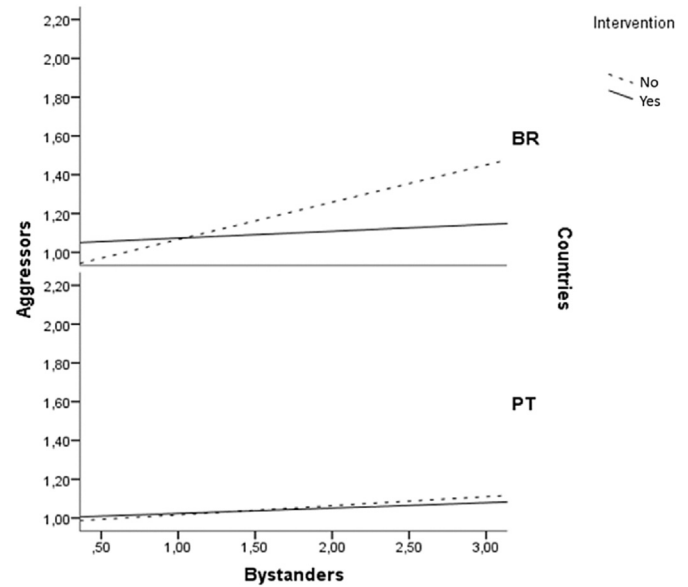


Fig. 3. Interactions between bystanders and intervention affecting the frequency of aggression behavior for the Portuguese (PT) and Brazilian (BR) subsamples.

For Portuguese bystanders our results showed that whether to intervene or not did not lead them to becoming aggressors ($\beta = .03, p = .27$ and $\beta = .05, p = .06$, respectively). As expected, our results showed that Brazilian bystanders who did not intervene tended to become aggressors ($\beta = .19, p < .01$). Contrarily to this, Brazilian bystanders who intervened did not tend to be aggressors ($\beta = .04, p = .90$). The difference between the slopes was significant ($t = -2.32, p = .02$). In sum, contrarily to the Portuguese bystanders, Brazilian bystanders who noticed incidents of cyberbullying and did not intervene, tended to become aggressors. These results support [Hypothesis 3b](#) of this study.

The frequencies pertaining to the specific behavior of the bystanders in incidents of cyberbullying according to Latane and Darley's Bystander Intervention Model (1970) may be seen in [Table 6](#).

The frequencies we present here indicate that although a higher percentage of the Brazilian students noticed more incidents of cyberbullying than the Portuguese students, more Portuguese students reported to have interpreted the event as an emergency and to have intervened. These results also indicated that both the Brazilian and Portuguese students determined that the appropriate action would be more often to help the victim rather than to block the aggressor. Specific information about how the Portuguese and Brazilian bystanders provided assistance is also presented in [Table 6](#).

4. Discussion

Due to the global impact of cyberbullying in contemporary societies we proposed to understand the possible overlapping roles in cyberbullying depending on whether the bystanders took personal responsibility for intervening. Thus, we approached this issue from a cross-cultural perspective specifically with regards to whether intervening could influence the relationship between being a bystander of a cyberbullying incident and being the victim or the aggressor. Moreover, we aimed to understand the specific behavior presented by bystanders, namely whether they noticed incidents of cyberbullying and interpreted these events as an emergency and which actions they determined as being appropriate in providing assistance.

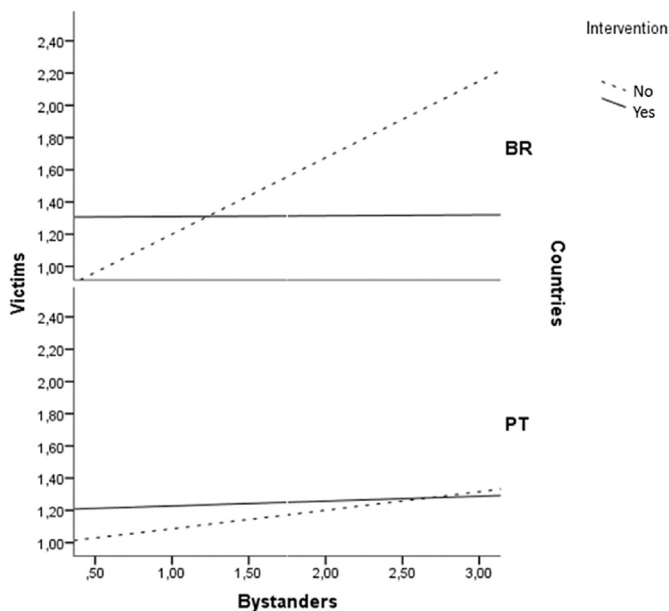


Fig. 2. Interactions between bystanders and intervention affecting the frequency of victim behavior for the Portuguese (PT) and Brazilian (BR) subsamples.

Table 6
Frequencies according to the bystander intervention model.

	Portugal		Brazil	
	Sometimes	Many times	Sometimes	Many times
1. Noticing the event				
<i>They threatened someone.</i>	15.6	4.6	26.4	4.5
<i>They harrassed someone with sexual content.</i>	11.2	5.0	24.2	2.6
<i>They spread rumors about their life.</i>	19.8	14.5	33.8	7.4
<i>They presented to be someone.</i>	8.9	5.4	30.1	3.7
<i>They made fun of them.</i>	18.7	16.8	31.2	7.4
<i>They insulted them.</i>	18.5	15.0	29.7	8.2
<i>They showed they had information about someone's life.</i>	15.8	10.6	27.9	5.2
<i>They revealed information about someone's private life.</i>	16.6	10.0	27.9	5.6
<i>They used someone's image without authorization.</i>	11.4	10.2	23.8	4.8
Total	15.16	10.23	28.30	5.48
	25.39		33.78	
2. Interpreting whether the event was an emergency situation				
<i>I tried to understand the gravity of the situation</i>			9.3	
3. Taking responsibility for intervening				
<i>Did you intervene?</i>	53.6 ^a		45.3 ^a	
4. Determining appropriate action				
<i>Decided to help the victim</i>	7.90		8.50	
<i>Decided to block the aggressor</i>	3.04		4.30	
5. Providing Assistance by:				
Helping the victim -				
<i>I supported the victim</i>	20.3		18.3	
<i>I told someone trustworthy</i>	3.3		2.6	
<i>I advised the victim to tell someone trustworthy</i>	9.8		9.7	
<i>I spoke to the parents of the victim</i>	1.5		3.7	
<i>Another way</i>	4.6		8.2	
Blocking the aggressor -				
<i>I told someone trustworthy</i>	1.9		5.9	
<i>I denounced the aggressor</i>	3.3		4.5	
<i>I dissuaded the aggressor</i>	4.4		2.2	
<i>I stopped the aggression before reaching the victim</i>	4.6		6.3	
<i>Another way</i>	1.0		2.6	

Note: All numbers refer to percentages from the entire sample.

^a Refers to yes.

This study has presented an important contribution to the study of the phenomenon of cyberbullying because other studies have reported either the different ways in which the phenomena occurs, individuals' type of involvement in single countries (Ortega, Calmaestra, & Mora-Merchan, 2008) or cross-cultural issues regarding the behavior of bystanders in situations of traditional bullying (Nesdale & Naito, 2005; Pozzoli et al., 2012). Our study has presented detailed information regarding the role and the behavior of bystanders that notice incidents of cyberbullying within a cross-cultural perspective. Furthermore, while some studies have only investigated the first step of Latane and Darley (1970) Bystander Intervention Model in virtual environments (Dillon & Bushman, 2015), and thus have suggested that research should focus more on the remaining steps, we have also provided information regarding the specific behavior presented by bystanders – as to whether they noticed incidents of cyberbullying and interpreted these events as an emergency and the actions they determined as being appropriate in providing assistance.

4.1. Theoretical contributions

As opposed to some studies that have investigated how the dynamics of the relationships between the experience of being an aggressor or the victim of cyberbullying could influence bystanders' behavior (Barlińska et al., 2013), the present research extends previous studies by examining how being a bystander, along with the specific behavior of intervening or not, could influence whether the latter also tended to become victims or aggressors. In support of our hypotheses regarding intervention and/or country of origin, the results presented in this study revealed that the Brazilian

bystanders who noticed an incident of cyberbullying but did not intervene were more likely to have become victims than the Portuguese bystanders. As opposed to the Portuguese bystanders, Brazilian bystanders who noticed incidents of cyberbullying and did not intervene tended to become aggressors. These results provide an important contribution because they show how the decision to intervene as a bystander can influence the possibility of there being overlapping roles in cyberbullying between bystanders, the victim and/or bully, unlike most studies that have examined the overlapping roles of the victim and bully only (Dehue, 2013; Völlink et al., 2013; Walrave & Heirman, 2011; Ybarra & Mitchell, 2004).

We also presented results indicating that a higher percentage of the Brazilian students noticed incidents of cyberbullying than the Portuguese students, and that a greater amount of the latter reported to have interpreted the event as an emergency and to have intervened. These results are an important addition to what Dillon and Bushman (2015) reported regarding the predictive nature of noticing a cyberbullying incident in bystander intervention. We specifically found that more bystanders in one country (i.e. Brazil) may have noticed events of cyberbullying primarily because, as is our belief, there has also been more documented violence in that country (Waiselfisz, 2008). A lesser percentage of bystanders in the other country (i.e. Portugal) reported noticing incidents of cyberbullying, most likely because of less violence rates and/or because they underrated their involvement in incidents of cyberbullying, as other studies have indicated (Francisco et al., 2015).

Despite the important contribution that shows a structural invariance across cultures for the Cyberbullying Inventory for College Students – CICS (Francisco et al., 2015), the results we present highlight the cultural issues involved in the relationship between

being a bystander of a cyberbullying incident and being the victim or the aggressor from a cross-cultural perspective. Moreover, as we have presented in the results section, there are cultural and social issues that may determine the behavior of these bystanders as to whether they noticed more or less incidents of cyberbullying and whether they intervened. The fact that the Portuguese students did not tend to become victims/aggressors and a greater percentage of them interpreted the event as an emergency and took responsibility for intervening than the Brazilian students also brings to light the importance of cultural dimensions such as indulgence. That is, the first group of bystanders belonged to a more restrained society (Hofstede, 2001), which may somehow have determined how they control their behavior online. Furthermore, the fact that Portugal presents higher rates of collectivism could also explain why a greater percentage of Portuguese bystanders intervened, since individuals in collectivist societies take responsibility for other members of their group and present a greater integration and cohesion between members of the group (Hofstede, 2001). However, the behavior of the Brazilian students who were also in a collectivist society (even though Portugal presents higher levels of collectivism) could have been regulated by their will to conform to their society's norms (Hofstede, 2001; Triandis et al., 1990) of presenting non-prosocial behavior online and thus becoming also the victim and/or aggressor when they did not intervene. Lastly, our results enabled us to extend the work of Bastiaensens et al. (2015) who found that bystanders intended to help the victim mostly in private and online. Accordingly, we were able to show that both Brazilian and Portuguese students determined whether or not to intervene in real action, and not only in intention, and that the appropriate action had been to help the victim, rather than to block the aggressor.

4.2. Practical implications

This study presents important implications regarding cyberbullying at an international level, since the number of bystanders can be vast due to the global impact of the Internet. Contrary to countries with higher levels of collectivism (like in Portugal), in countries such as Brazil (with lower levels of collectivism), students who did not intervene tended to become more victims, thus we suggest that empowerment educational programs be developed with a basis on the cultural differences that characterize the phenomena and its bystanders in diverse countries. Moreover, and considering we have presented that bystander behavior may differ from one country to another, interventions should take this into account worldwide.

Also, although young adults, adolescents, and even children consider themselves as digital natives (Livingstone, Mascheroni, Ólafsson, & Haddon, 2014) in comparison with their parents because they feel more comfortable in using technologies, the first lack life experience. Considering this, education and psychology professionals should offer interventions on technology, its uses and misuses as part of school curriculums and ethics from early on (Tognetta & Bozza, 2010) with an emphasis on student and parent education in order to decrease the potential cybergap that exists between them. Hence, these interventions could provide critical thinking skills, self-awareness and autonomy online that enable parents and children/adolescents to respond to cyberbullying incidents in a self-regulated manner.

Furthermore, the results presented in this study call for a more profound understanding of what individuals in different societies and with different cultural standards consider as a cyberbullying incident, whether, how and why they intervene as bystanders, and how educational resources, such as digital games with hypothetical cyberbullying scenarios, could empower them to understand the

incident, and then regulate and develop pro-social behavior online. Some authors have suggested inclusively that cyberspace is an appropriate location to provide intervention/educational programs for those that struggle with the effects of cyberbullying (Foody, Samara, & Carlbring, 2015).

Moreover, the results from this study present theoretical and practical implications that reinforce the importance of promoting proactive and prosocial behavior on the bystanders' behalf towards victims with support (Darley & Latane, 1968; Hawkins et al., 2001), and intervention (Pozzoli & Gini, 2010). We expect that with innovative educational resources, that enable professionals to understand how individuals behave as bystanders and can be encouraged to intervene, that the bystander effect in cyberbullying may become pro-social online at home and in schools and universities around the world.

Interventions should focus on the victims, the aggressors, and the bystanders since they play an important role in stopping these incidents. Specifically, professionals should consider designing interventions based on principles that enable individuals to become aware of their behavior online and empower them to make ethically-based decisions that may have a positive impact on the lives of all of the actors involved in cyberbullying. For instance, with a basis on Cialdini's work (2009) on the science and practice of influence, interventions could: (1) include the participation of institutional authorities and researchers in the field of cyberbullying to share expert knowledge and facts with individuals, as well as to show preoccupation on the first's behalf; (2) provide social proof of how the majority of Internet users (especially peers) do not cyberbully, but rather, take preventive measures to help victims – in case of uncertainty about the course of action one should take when confronted with these incidents; (3) model reciprocation of possible pro-social behavior online between institutions (e.g. universities, faculties, departments, schools, etc.) and Internet users; (4) get individuals to make and be consistent in a commitment in striving to adopt pro-social interventive behavior online; (5) give examples of cyberbullying victims that have similar characteristics to those of the bystanders, since individuals are also more likely to favor (like) those who have something in common with them, and thus creating a sense of empathy towards the victim and awareness that the same could happen to them; (6) and, make individuals aware of the possible scarcity and uniqueness of opportunities to help a victim under strainful cyberbullying incidents, since individuals may be more sensitive to possible losses (e.g. peer school dropout, peer hospitalization, peer suicide, etc.) than to possible gains (e.g. popularity or friendship with the aggressors).

4.3. Limitations and future research

As every investigation encloses weaknesses, this study is not without its limitations. Firstly, we presented a cross-cultural study with only two different countries. It would be interesting to provide a vaster sample of the countries represented in this study, as well as of different countries with diverging cultural dimensions according to Hofstede's model (2001). Another weakness of the current study was the inclusion of previously addressed but not directly measured cultural values of Individualism/Collectivism and Indulgence, thus drawing inferences based on previous studies that considered the average Individualism/Collectivism and Indulgence levels for Portugal and Brazil. Furthermore, we did not present full scales along with their psychometric properties to measure whether the bystanders interpreted the event as an emergency, took responsibility for intervening and determined the appropriate action (steps two, three and four of Latane and Darley's Bystander Intervention Model, 1970), although we intend to present these in future studies. An important contribution to the study of the role of

the bystanders in cyberbullying would be to present full psychometrically validated scales for all of the steps in this intervention model. Moreover, data was collected from a single source, at a single time, using a single method (questionnaire). When data are collected in this way, there can be spurious covariation among responses. As a result, observed correlations reflect shared method and trait variance. Considering this can inflate observed relationships between measures, research that relies solely on self-reported survey questionnaires is generally unable to rule out numerous alternative explanations for the results (i.e., priming, consistency, reverse causality). Thus, in order to avoid possible bias, future studies might consider a longitudinal multi-source/methodological approach.

The literature has shown that others hinder bystanders from intervening (Darley & Latane, 1968; Latane & Darley, 1970), allowing for the diffusion of responsibility. Thus, future studies might consider the control of the number of bystanders or to include this variable as a potential moderator in the measured hypotheses. Moreover, considering the effects of the severity of the incident (Bastiaensens et al., 2014) and cognitive empathy (Galinsky et al., 2005), future studies should consider controlling the potential indirect effect of these variables.

Finally, it would also be interesting to examine why a reduced percentage of the Brazilian sample interpreted cyberbullying events as an emergency. In other words, understanding if this interpretation is due to the fact that they are in an indulgent society, or if they are “used to” different types of violence, leading them to not valuing cyberbullying incidents, since the latter do not affect the victim in a physically direct way.

4.4. Conclusions

Cyberbullying has no boundaries of time or space and the number of bystanders can increase infinitely as the interactive audience of a virtual stage. In this study, we were able to uncover a cultural difference regarding the relationship between noticing an incident of cyberbullying and intervening, and the tendency of overlapping roles – that is, being the bystander and becoming a victim and/or an aggressor. As world nations’ responsibility regarding the digital realm increases with the rapid expansion of the Internet, and as an increasing number of deaths are associated to the impact of cyberbullying on children, adolescents and young adults, the time to act is now. Ultimately, taking into account the findings and the nature of our cross cultural study, digital societies must come together bringing forth the strengths of their cultural diversity to delete the cyberbullying virus with actions that speak louder than words.

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