

Adolescents and Retaliation Coping with Cyberbullying: Do Individual and Social Factors Matter?

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Abstract

Cyberbullying has been linked with a host of negative outcomes for adolescents. This study explored the role of child-parent -teacher-peer relationships (external social factors) and self-esteem and assertiveness (individual factors) in predicting the use of a retaliation coping strategy among adolescents. The study employed a cross-sectional research design, and a total of 778 secondary school adolescents aged 14 to 18 completed a self-report questionnaire. Results showed that adolescents with higher levels of self-esteem reported less likelihood of using the retaliation coping strategy in dealing with cyberbullying, while adolescents with greater levels of assertiveness reported a high likelihood of using retaliation. It was also found that older male adolescents are less likely to report the use of retaliation compared to female adolescents. Also, older adolescents who reported more positive parent-child relationships are more likely to use retaliation. Results further showed that highly assertive adolescents with more positive teacher relationships are less likely to use retaliation. Findings suggest gendered and age-specific education and intervention programmes that promote positive adolescents relationships with parents and teachers and responsible online assertiveness skills to cope with cyberbullying.

Keywords: Cyberbullying, retaliation, coping, assertiveness, self-esteem

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Introduction

A rapid increase in the use of Information and Communication Technologies (ICT) in terms of cell phones, computers and the Internet has changed the way people interact with each other across the globe. Recent studies have shown that mobile phones and the Internet are used as a tool for promoting communication and ethical behaviours in schools (Mfaume et al., 2019). To date, there are about 4.7 billion Internet users in the

world (Tiel, 2020). Young children, at an earlier age than ever before, are constantly surrounded by multiple ICT devices such as cell phones, computers, and tablets. A recent study with adolescents from the United States of America has shown that 95% own smartphones, 85% use YouTube, 72% use Instagram, 69% use Snapchat, 51% use Facebook, and 32% use Twitter (Anderson & Jiang, 2018). This corroborates findings in a study with adolescents from Tanzania, which has found that nearly 50% of adolescents own cell phones, 76% use cell phones at home, and 86% admit to connecting to the Internet (Onditi, 2018). Studies and reports have also shown that children from both developed and developing countries have social network accounts before the minimum age requirement of 13 years (Tiel, 2020). Thus, in many countries, modern ICT devices have become an integral part of child development.

Studies show that children and adolescents use these technologies for socialisation, communication, entertainment, education, notes taking, watching the news, access to health information, getting support from others, and identity exploration needs (Anderson & Jiang, 2018; Mfaume et al., 2018; Onditi, 2018). Other studies have linked mediated digital video games and education applications with child cognitive development (Blumberg et al., 2019; Brooks, 2019). Besides the advantages, the use of ICT comes with a host of negative impacts on children and adolescents, including mental health problems, distraction, unrealistic views of others' lives, harmful relationships, and cyberbullying (Anderson & Jiang, 2018; Onditi & Shapka, 2021).

Cyberbullying, defined as a form of aggressive behaviour carried out using electronic communication or internet-based devices (Corcoran et al., 2012), has been identified as a global public health concern (Khine et al., 2020). By hiding behind the screen, cyberbullies are likely to reach the victim at any place at any time to embarrass, humiliate, or hurt the victim by sending intimidating texts or by posting pictures and harassing messages online (Li, 2006; Sticca & Perren, 2013). Globally, studies have shown that about 5.5% to 75% of children and adolescents (an average of 25%) have reported being cyberbullied, and 3% to 60% reported to have engaged in cyberbullying others (Betts et al., 2017; Garaigordobil & Martínez-Valderrey, 2018; Tokunaga, 2010). Consistent with global statistics, a study with Tanzanian adolescents (Onditi & Shapka, 2019) showed that 58% have been victims of cyberbullying, and 42% have been engaged in cyberbullying others. Further, studies have indicated that children from both developed and developing countries are susceptible to cyberbullying and its associated impacts (Tiel, 2020).

Cyberbullying has been linked with a host of negative impacts on children and adolescents, including depression, anxiety, loneliness, stress, fear, poor performance in school, suicidal ideation, and in extreme cases, suicide (Anderson & Jiang, 2018; Bonanno & Hymel, 2013; Khine et al., 2020; Onditi & Shapka, 2021; Worsley et al., 2019). Children have reported the use of various coping strategies to deal with

cyberbullying, including avoidance, talking in person with the perpetrator, seeking help from others, especially peers, blocking perpetrators, or retaliating (Frey et al., 2015; Giménez- Gualdo, 2018; Sittichai & Smith, 2018). Of these coping strategies, retaliation, defined as aggressive acts in response to a threat to an individual's well-being (Frey et al., 2015), as will be discussed in detail later, has been identified to perpetuate bullying behaviours (Frey & Strong, 2018).

The Social-Ecological Theory by Bronfenbrenner (2005, 1979) is one of the models through which the factors influencing an individual's selection of coping strategies with bullying among adolescents can be understood. The model posits that an adolescent develops in a series of intercalated systems which influence adolescents' behaviour. According to the model, 1) the *microsystem* entails the processes that take place within a proximal context where an adolescent is found, such as family, peers, school environment, etc.; 2) the *mesosystem* entails the processes that take place between two or more systems involving the adolescent, for example, parent-teacher meetings; 3) the *exosystem*, involves processes between two or more distal environments where a child is not directly found, but the processes occurring in the setting may have indirect influence on adolescents' development and wellbeing, for example, home and parent's workplace relationships; 4) the *macrosystem*, involves influences on adolescents from a larger environment such as national/ international ideologies, culture, and social institutions; and, 5) the *chronosystem*, which refers to the changes that occurs over time in the biological and psychological structures of a developing individual throughout their life span. From this model, bullying is embedded within a large social context of peer groups, families, schools, neighbourhoods, and communities (Bauman & Yoon, 2014) and currently in the digital environment (Tokunaga, 2010). In particular, this study focused mainly on the bidirectional interactions and process that occurs at the *microsystem's* level. This includes the influence of individual personal characteristics of an adolescent (e.g., gender, self-esteem and assertiveness) and influences of external environmental factors (e.g., child relations with parents, peers, and teachers).

Despite the evidence that retaliation may escalate bullying (Frey et al., 2015), studies have shown that adolescents use retaliation as one of the ways to cope with cyberbullying (Betts et al., 2017; Giménez-Gualdo, 2018; Heiman et al., 2019). From the social-ecological model discussed earlier, bullying and how individuals cope with it is a function of the bidirectional interactions between individuals' personal characteristics and external social factors. However, there is a dearth of research examining the influence of personal characteristics and external social factors on adolescents' use of retaliation to cope with cyberbullying. Therefore, the purpose of this study was to explore the influence of peer, parent-child, teacher- student relationships, self-esteem, and assertiveness on the use of a retaliation coping strategy

with cyberbullying among adolescents in Tanzania. Three research questions guided this study:

- i) How are individual personal factors (assertiveness and self-esteem) related to retaliation in coping with cyberbullying among adolescents?
- ii) How are external social factors (relationships with parents, peers, and teachers) related to retaliation in coping with cyberbullying among adolescents? and
- iii) Do age and sex moderate these relationships?

Retaliation coping strategy

Coping refers to various cognitive and behavioural efforts used by individuals to deal with stressful situations (Folkman & Moskowitz, 2004; Lazarus & Folkman, 1984). The two widely-used distinctions that explore how individuals cope in challenging, stressful situations are: 1) *problem-focused* (e.g., direct or active efforts to change the situation) versus *emotional-focused* (i.e., efforts to reduce emotional distress; Lazarus & Folkman, 1984); and 2) *approach* (i.e., cognitive and behavioural efforts to solve the problem) versus *avoidance* (i.e., cognitive and behavioural efforts to avoid thinking or confronting the problem; Roth & Cohen, 1986). With regard to cyberbullying, studies have shown that children and adolescents use various coping strategies to deal with this form of aggression. The strategies include avoidance, talking in person with the perpetrator, seeking help from others, especially peers, blocking perpetrators, or retaliating (Frey., 2015; Tokunaga, 2010). Although there are various coping strategies to deal with cyberbullying, overall, retaliation has been associated with further victimisation (Frey et al., 2015).

Retaliation, defined as aggressive acts in response to a threat to an individual's physical, social, emotional, identity, and cognitive well-being (Frey et al., 2015), is a typical behaviour in human history. Researchers have reported retaliation to differ across individuals and cultures (Frey et al., 2015) and have both favourable and unfavourable outcomes, "bittersweet" (Eadeh et al., 2017). Given the popularity of retaliation in the film and game designing industry, in the Holy Scriptures, and popular media, it is not surprising for children and adolescents to use retaliation in dealing with cyberbullying.

Studies with adolescents have found that victims use retaliation as one of the ways to deal with cyberbullying. (Betts et al., 2017; Heiman et al., 2019; Sittichai & Smith, 2018). In a study with adolescents, Giménez-Gualdo (2018) found retaliation as the primary coping strategy used to deal with cyberbullying. Similarly, Sittichai and Smith (2018) showed that male adolescents were more likely to use retaliation compared to their female counterparts, who prefer ignoring and blocking perpetrators. Studies on traditional school bullying have also shown that children were more likely to employ relation in response to bullying (Parris, 2011). In a study with adolescents and parents

on solutions to hypothetical bullying, Offrey and Rinaldi (2017) found that nearly 41% of adolescents reported the use of aggressive strategies to deal with bullying. In the bullying episodes, whether an individual decides to employ retaliation or not may have a profound impact on the dynamics of bullying (Frey et al., 2015; Offrey & Rinaldi, 2017). Given that retaliation varies across individuals and cultures and that children employ it in response to bullying, an understanding of various social (i.e., child relations with parents, peers, and teachers) and individual personal (i.e., assertiveness and self-esteem) factors related to the use of retaliation is essential, especially in a Tanzanian context where studies on cyberbullying are at the infancy stage.

External social factors

As discussed in the Socio-Ecological Model, the behaviour of an adolescent is influenced by the bidirectional interactions and processes that occur between external social and individual factors within a series of interrelated systems. This sub-section discusses the influence of parent-child relationships, peer relationships, as well as teacher-child relationships in the use of retaliation coping strategies with cyberbullying among adolescents.

Parent-child relationships

Although a family may consist of several primary caregivers, researchers, theorists, and practitioners acknowledge the vital role of parent-child relationships in influencing child and adolescent development (Cortés-Pascual et al., 2020). We also know from Baumrind's (1966) parenting typologies that a child with parents who are emotionally available, loving, and caring is more likely to experience positive developmental outcomes. Studies have consistently reported that positive parent-child relationships are crucial for buffering children and adolescents from stress and its associated negative outcomes (Rubin et al., 2004). In contrast, children and adolescents who have low-quality parent relationships and feel less socially supported by parents and other caregivers tend to report high levels of internalising (e.g., loneliness, hopelessness) and externalising (e.g., aggression, stealing, delinquent) behaviours (Holden et al., 2011; Rubin et al., 2004). As such, they are more likely to use less adaptive coping strategies in stressful events. This corroborates findings from a meta-analysis study that children with high parent-child relationships were more likely to use adaptive coping strategies than their counterparts with poor parent-child relationships (Nocentini et al., 2019). The study further associated parental stress and authoritarian and permissive parenting styles with children's involvement in bullying behaviours. This echoes findings that cyberbullies have parents with low levels of parenting competencies and are less involved in the child's welfare (Garaigordobil & Machimbarrena, 2017). In a study with parents and adolescents, Offrey and Rinaldi (2017) found that some parents encouraged children to use aggressive coping strategies in dealing with bullying episodes. Conversely, an intervention study on cyber safety found that parents

who attended training were more likely to encourage children to share bullying experiences with adults rather than retaliate than parents who did not attend training (Roberto et al., 2017). The reviewed literature provides mixed results on parent-child relationships and their influence on the choice of coping strategies. Further studies are needed to delineate the influence of parent-child relationships in the use of the retaliation coping strategy, especially with cyberbullying.

Peer relationships

As children approach adolescence, peer networks and friendships become the most common and dominant source of socialisation (Holdfeld, 2013; Rubin et al., 2011). Studies have consistently associated healthy peer relationships and feelings of being valued in the peer group with various positive developmental outcomes (Birkeland et al., 2014; Rubin et al., 2011). Adolescents who have positive peer experiences tend to be well-adjusted and protected from negative experiences such as peer victimisation (Birkeland et al., 2014; Bukowski et al., 2011; Rubin et al., 2011). In contrast, there is ample evidence showing that being rejected by peers is associated with a host of negative outcomes such as internalising disorders (e.g., depression, low self-concept, and low self-esteem, loneliness) and externalising behaviour problems, including delinquency (Birkeland et al., 2014; McDougall et al., 2001). With regard to bullying, adolescents with positive relationships with peers are less likely to engage in bullying behaviours (Cortés-Pascual et al., 2020). Findings from observational studies have found that peers can deflate a bully's power and help victims get relief (Hawkins et al., 2001). A study with Portuguese adolescents reported a positive association between quality peer relationships, self-esteem, and active coping in challenging situations (Mota & Matos, 2014). However, how peer relationships impact the selection of retaliation as a coping strategy for cyberbullying is understudied, especially in developing countries where studies on cyberbullying are at the infancy stage.

Teacher-child relationships

School is a social setting where a developing child spends a significant amount of time in life. In schools, studies have shown that teachers are the most critical and influential adults in the lives of children and adolescents (Eccles & Roeser, 2011; Elledge et al., 2013). From theories of attachment (Bowlby, 1969), ethics of care (Noddings, 1988), as well as social support (Holden et al., 2011), positive teacher-child relationships are established when teachers demonstrate genuine warmth, support, and care for all students irrespective of their backgrounds. From a researchers' viewpoint, teachers are recognised as "invisible hands" impacting peer group processes and culture (Farmer et al., 2011). According to Cortés-Pascual et al. (2020), adolescents with positive relationships with and who feel supported by teachers are less likely to engage in bullying behaviours. Quality teacher-student interactions have also been reported to

insulate adolescents from a wide range of risk behaviours, including bullying and its associated negative effects (Eccles & Roeser, 2011). In contrast, findings in a study with adolescents indicated that students who felt discriminated against by teachers reported using retaliation in response to school bullying (Mulvey et al., 2019).

Individual factors

As discussed earlier, an adolescent's behaviour is influenced by the interactions that occur between external and individual social factors within a series of interrelated systems. This sub-section explains the influence of self-esteem and assertiveness in the use of retaliation coping strategies with cyberbullying among adolescents.

Self-esteem

Self-esteem is the positive or negative evaluation aspect of the self-concept (Rosen & Patterson, 2011), including an evaluation of an individual's own value and self-worth (Harter, 1999). Researchers investigating both traditional bullying and cyberbullying have identified self-esteem as an important and controversial psychosocial construct in bullying behaviours (Espelage et al., 2013; Martínez et al., 2020). In particular, in their review of bullying research, Espelage et al. (2013) reported that perpetrators (i.e., individuals who bully others) tended to bully other peers (i.e., victim or target) in order to establish or maintain their own self-esteem. A systematic review of meta-analyses revealed that high self-esteem is a protective factor for engaging in bullying and cyberbullying (Zych et al., 2019). Other studies have found a positive association between low self-esteem and cyber victimisation (Martínez et al., 2020).

With regard to coping, studies have consistently reported a link between self-esteem and coping strategies (Dolenc, 2015; Lam et al., 2014; Mota & Matos, 2014). In particular, findings from a study examining the influence of social relations and self-esteem on coping among Portuguese adolescents (Mota & Matos, 2014) indicated that both higher levels of self-esteem and quality relations with peers predicted the use of active coping strategies. Another study on self-esteem and coping among Vietnamese high school adolescents in America, Lam et al. (2014) found a significant positive association between self-esteem and instrumental support and a negative association between self-esteem and disengagement and venting. Similarly, findings from a study looking at self-esteem and strategies for coping with stress among secondary school adolescents in Slovenia (Dolenc, 2015) indicated that individuals with higher levels of self-esteem preferred active and problem-focused coping strategies. A study with university students found a significant positive relationship between self-esteem and the use of problem-focused coping (Balakrishnan & Fernandez, 2018).

Assertiveness

Defined as an individual's ability to stand up for his/her rights and to express his/ her feelings, thoughts, needs and preferences in ways that show respect for oneself and others (Ma & Jaeger, 2010; Onuoha & Munakata, 2005; Wills et al., 1989), assertiveness is one of the crucial skills in social interactions. In a recent study with adolescents, Rodríguez-Hidalgo et al. (2020) found a positive association between assertiveness and cyber victimisation in Spain and negative association with it in Ecuador. In the same study, assertiveness was negatively related to cyberbullying in both Spain and Ecuador. Another study with adolescents found a negative association between assertiveness and victimisation (Avşar & Alkaya, 2017). A recent study with adolescents found a positive association between assertiveness and cyberbullying (Martínez et al., 2020). From the reviewed studies, the relationship between assertiveness and bullying appears to vary between individuals and across countries.

With regard to coping, studies have reported that assertive children are more capable of communicating their needs, requests, and opinions openly in different social interactions (Rubin et al., 2011). In a study with adolescents, Giménez-Gualdo (2018) found that assertive children are likely to use positive coping strategies such as reporting cyberbullying incidents to parents, teachers, police, and ICT service providers. This is consistent with a study that revealed a positive association between assertiveness and the use of problem-focused coping (Tankamani & Jalali, 2017). Although studies have consistently linked a higher level of assertiveness with positive outcomes (Ma & Jaeger, 2010; Onuoha & Munakata, 2005), how assertiveness relates to the use of retaliation in coping with cyberbullying requires further research.

Methodology

Participants and context

This cross-sectional study involved a total of 778 participants (48% female, 52% male) aged 14 to 18 ($M = 15.79$, $SD = 1.27$) from five randomly selected secondary schools (Form I to Form IV) in Dar es Salaam and Mwanza regions, the two largest commercial cities in Tanzania with higher level internet and mobile phones connections. The choice of quantitative research method was due to its robustness in generalisation of findings using a larger sample size, use of questionnaires in collecting data, establishing a relationship between study variables and strengths in predicting the influence of independent variables on the outcome variables (Best & Khan, 2006), which aligned with the main study questions. This age range concedes to previous studies finding that adolescents are the largest users of digital media and are more vulnerable to cyberbullying and its associated adverse outcomes (Hinduja & Patchin, 2013; Shapka & Law, 2013). In each school, the researcher obtained the total number of streams in each grade level. The names of streams in each grade level were written down on pieces of paper and put in a box. Later, the researcher randomly picked a stream from the box to participate in the study. This procedure resulted in a total of 20

streams, four from each of the sampled schools.

Procedure

Given that the project involved a researcher from Tanzania (Principal Investigator) and from Canada, approval was obtained from the University of Dar es Salaam and the University of British Columbia ethics boards. Subsequent permissions to visit schools were obtained from the Dar es Salaam and Mwanza regions and the districts of the five sampled schools. At the school level, the heads of schools gave access to classrooms. After approval and permission to the research sites, the author and trained research assistants visited the schools to introduce the study and distribute parental consent letters. Only 95 per cent of students who received parental consent and gave assent were allowed to participate in the study. Before completing self-report questionnaires, participants were verbally informed that their participation was voluntary, and only those who gave their assent were allowed to participate in the study. Moreover, participants were also informed that the information that they provide will remain confidential and be used solely for academic purposes. No one will be victimised for sharing his/her information. Overall, researchers administered self-report questionnaires during a regular class lesson, which is 40 to 80 minutes.

Measures

The questionnaire consisted of several demographic variables (i.e., age, gender, and grade) that were of interest to the study. To assess perceived relationships with their parents, peers, and teachers, participants responded to a total of 21 items (seven items for each of three constructs) adapted by Konishi (2003, 2005) from Hayden-Thomson's (1989) Relational Provision and Loneliness Questionnaire (RPLQ). Identical items were used across each relationship group (peers, parents, and teachers) with changes only in specific reference to a particular group (e.g., "I feel I have a strong connection with other children"; "I feel I have a strong connection with my parent(s)"; and "I feel I have a strong connection with the teacher(s)"). Participants were asked to think about their relationships with their parents, peers, and teachers and respond to each item on a 4-point Likert scale (*Not at all true, Sometimes true, True most of the time, and Always true*). The three subscales were scored by computing a mean for the seven items included in each subscale. High mean scores reflected greater feelings of social integration in each case. The three sub-scales had excellent Cronbach's alpha ranging from .87 to .89.

A total of 11 items on general social assertiveness (GSA) from Wills et al. (1989) adaptation of Gambrill and Richey's (1975) assertion inventory were used. Participants were asked to indicate how often they engaged in a range of behaviours (e.g., "Ask a person annoying you to stop"; "Start a conversation with a stranger"). Participants responded on a 4-point Likert scale (*Never do this; Sometimes do this; Often do this; and Always do this*). Based on the results of Principal Component Analysis (PCA), the

composite variable for this sub-scale was computed by taking the mean of eight items that appeared relevant in this cultural context. Higher scores indicated higher levels of general social assertiveness. The scale demonstrated excellent Cronbach's alpha of .81.

Rosenberg's (1965) self-esteem scale (RSE) was used to measure adolescents' self-esteem. Participants were asked to rate themselves on each of the ten items (e.g., "On the whole, I am satisfied with myself"; "At times I think I am no good at all") using a 4 – point Likert scale (*Strongly disagree; Disagree; Agree; Strongly agree*). Negatively worded items (i.e., items 2, 5, 6, 8, & 9) were reverse-scored. Based on the Principal component analyses, one item, "I wish I could have more respect for myself", was dropped. Thus, the composite score was computed by taking the mean of nine items that appeared relevant for this particular study group and cultural context. Higher scores indicated a higher level of self-esteem. Although this is a classic self-esteem scale that has been extensively used across age groups (Patchin & Hinduja, 2010), Cronbach's alpha for this measure was fair .67.

A total of 7 items adapted from Frey et al. (2015) were used to measure retaliation (e.g., "Get back at the person by threatening or insulting him/her"; "React angrily on the phone or internet"). Participants responded to each of the items on a 4-point Likert scale regarding what they did in response to cyberbullying (*Never do this; Sometimes do this; Often do this; Always do this*). A composite variable was obtained by computing the mean for all items of the measure. The scale demonstrated excellent Cronbach's alpha of .84.

Analysis

Data were analysed using quantitative analysis software (SPSS). Preliminary analysis of the sample characteristics and testing for assumptions was done using descriptive statistics. For the three research questions, which explored the relationship between individual factors, social factors and coping strategies, as well as the moderation effect of grade/age and gender, hierarchical multiple regression was performed with retaliation as the dependent variable. Demographic variables (i.e., grade and gender) were entered in Block 1. Individual factors (assertiveness and self-esteem) were entered in Block 2. External social factors (relationships with parents, peers, and teachers) were entered in Block 3. Finally, two-way interactions of demographic variables by individual personal factors, demographic variables by social factors, and individual factors by social factors were explored in Block 4. Only those which were found to be significant are reported in Table 1.

Findings

As presented in Table 1, gender and grade were entered in Block 1, and neither was significantly associated with the use of retaliation. In Block Two, self-esteem and general assertiveness emerged significant ($R^2 = .07$, $\Delta R^2 = .06$, $p < .001$), with higher self-esteem being linked with lower reported use of retaliation ($\beta = -.25$, $p < .001$) and greater assertiveness being associated with higher reported use of retaliation ($\beta = .20$, $p < .001$). When the social factors were entered into Block 3, none of them were significant. Interactions were explored in Block 4, and grade by gender and grade by parent-child relationship ($\beta = .21$, $p < .05$; $\beta = .49$, $p < .01$ respectively; $R^2 = .10$, $\Delta R^2 = .02$, $p < .01$) were significantly associated with retaliation. As presented in Figure 1, older male adolescents were less likely to report use of retaliation compared to female adolescents. It is not clear if the difference is due to older males actually using it less or just being less willing to admit to retaliation behaviour. Also, older adolescents who reported more positive parent-child relationships were more likely to use retaliation compared with older adolescents who reported less positive parent-child relationships (see Figure 2). A separate regression analysis was conducted to explore two-way interactions in the teacher-child relationship. The only significant interaction was general assertiveness by teacher-child relationship ($\beta = -.43$, $p < .01$; $R^2 = .10$, $\Delta R^2 = .02$, $p < .01$). In particular, highly assertive adolescents with more positive teacher-child relationships were less likely to use of retaliation.

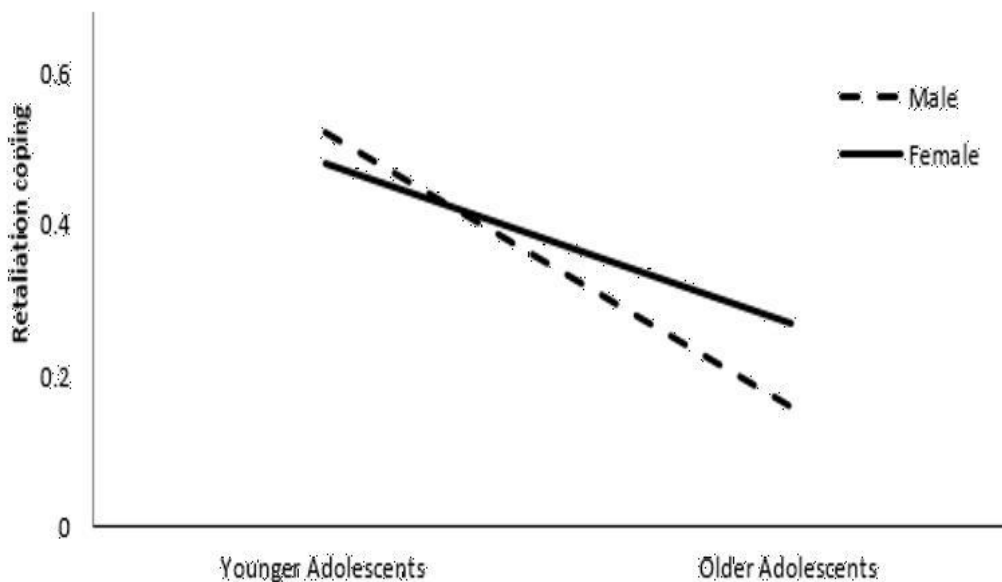


Figure 1: *Retaliation Coping as a Function of Age and Sex*

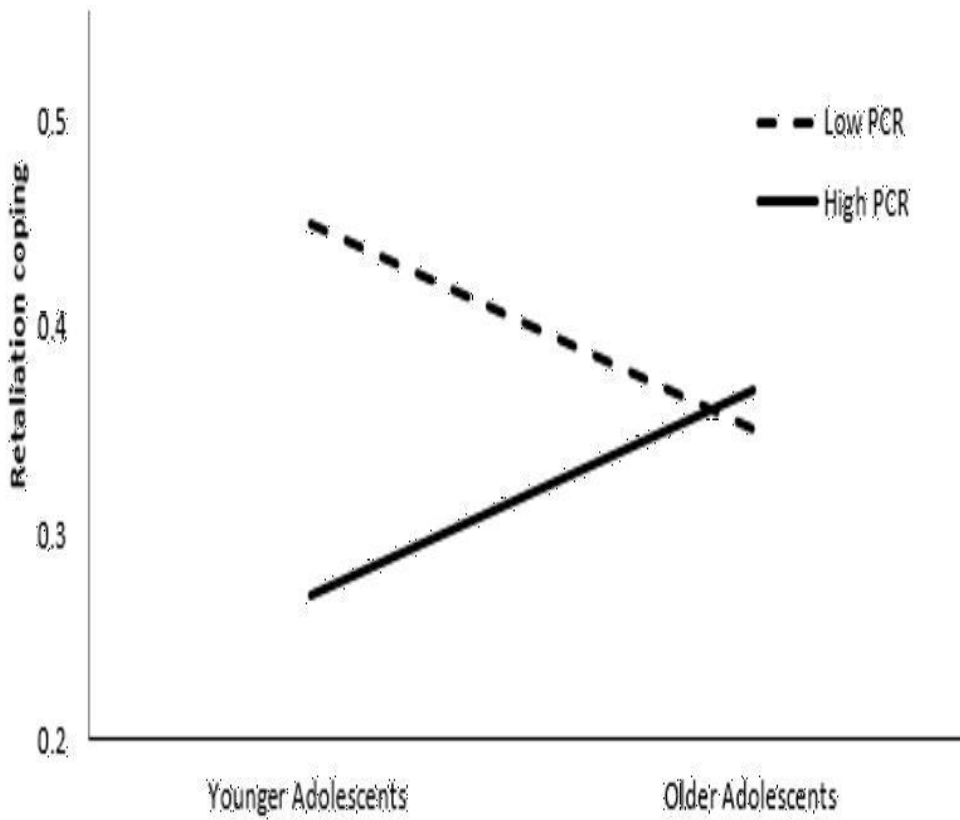


Figure 2: *Retaliation Coping as a Function of Age and Parent-Child Relationship*

Table 1

Summary of Hierarchical Multiple Regression Examining the Relationships Between Demographic Variables, Individual Characteristics, External Social Factors and Retaliation Coping

DV = Retaliation Coping (RC)	β Block 1	β Block 2	β Block 3	β Block 4	R^2	ΔR^2
<i>Block 1</i>					.01	.01
Grade	.05					
Gender	-.06					
<i>Block 2</i>					.07	.06***
Grade		.06				
Gender		-.06				
Assertiveness (GSA)		.20***				
Self-esteem		-.25***				
<i>Block 3</i>					.08	.01
Grade			.06			
Gender			-.06			
Assertiveness (GSA)			.22***			
Self-esteem			-.22***			
Parent-child relationship (PCR)			-.08			
Peer-relationship			.02			
Teacher-child relationship (TCR)			-.04			
<i>Block 4</i>					.10	.02**
Grade				-.37**		
Gender				-.14		
Assertiveness (GSA)				.38***		
Self-esteem				-.36**		
Parent-child relationship (PCR)				-.37*		
Peer-relationship				.02		
Teacher-child relationship (TCR)				-.04		
Grade x Gender				.21*		
Grade x PCR				.49**		
Gender x PCR				-.10		
GSA x PCR				-.26		
Self-esteem x PCR				.27		

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. (Female code = 1; Male code = 0)

Discussion

This study has unveiled intriguing and distinctive patterns concerning the influence of social and individual personal factors on the utilisation of retaliation as a coping strategy in response to cyberbullying experiences among Tanzanian adolescents. For example, this study found a significant positive association between assertiveness and retaliation; that is, highly assertive adolescents reported more use of retaliation coping strategies. This is contrary to previous findings that adolescents who are assertive use problem-focused coping, such as telling parents and teachers (Giménez-Gualdo, 2018; Tankamani & Jalali, 2017). Given that retaliation has been generally found to have “bittersweet” outcomes (Eadeh et al., 2017; Frey et al., 2015), whether the outcome was bitter or sweeter for the Tanzanian adolescents remains open for future studies. Based on the findings, educational efforts to teach students how to exercise responsible assertion online, as opposed to aggressive or submissive, in their responses to challenges may be worthwhile. With this in mind, promising programs such as the SAFETEEN Program (Roberts, 2001) that empower both female and male adolescents with simple, effective, and assertive strategies that can be used to help adolescents stand up for themselves in challenging interpersonal problem situations without resorting to violence/aggressive or submissive responses are recommended.

This study revealed a negative association between self-esteem and retaliation. Adolescents with higher levels of self-esteem reported less use of retaliation in response to cyberbullying. One possible explanation, which is consistent with previous studies, is that adolescents who report higher levels of self-esteem have a greater tendency to use adaptive coping strategies such as active and support-seeking (Balakrishnan et al., 2018; Dolenc, 2015; Mota & Matos, 2014) and lower reported tendencies to use avoidance and venting in response to stressful situations (Lam et al., 2014). Another possible explanation is that adolescents who have high self-esteem are more likely to be assertive and confident to stand up for themselves in various challenging social situations and use other direct problem-focused coping strategies, such as talking with the cyberbullying perpetrator and seeking help, than their counterparts who are more likely to use avoidance and emotional-focused coping strategies.

The finding that older adolescents who had strong relationships with their parents were more likely to adopt retaliation coping strategies in response to cyberbullying was somewhat surprising. This is contrary to previous studies that have linked positive parent-child relationships with positive developmental and behavioural outcomes (Birkeland et al., 2014; Holden et al., 2011). One possible explanation from studies is that retaliation differs across individuals and cultures (Frey et al., 2015) and in the Tanzanian context, where standing up for oneself is strongly endorsed. Hence, this finding is likely to be a positive reflection of Tanzanian family values around retaliation. Similar to previous study findings that some parents encouraged children to use aggressive coping (Offrey & Rinaldi, 2017), some Tanzanian children are likely to

be backed up by family members or parents when they retaliate. In other words, children's value of retaliation may mimic the immediate or larger cultural values around retaliation. From personal experience and some Tanzanian families, when a child reports being bullied by peers, the immediate response from parents would be what did you do in response? This is in line with Frey et al. (2015), who have shown that retaliation is a behaviour that is not only condoned but expected in some cultures. For example, "among the Pushtuns of Afghanistan, a man who refused to retaliate for an offence might be ostracised" (Frey et al., 2015, p.27).

Another finding was that highly assertive adolescents with more positive teacher-child relationships were less likely to use retaliation. This indicates that the educational context may provide a different value on retaliation different from the family context. One possible explanation is that through school norms, rules, and bidirectional teacher-student interactions, teachers tend to model or influence students' behaviours in multiple ways (Hinduja & Patchin, 2013). For example, teachers may directly or indirectly promote other coping strategies, such as active coping and social support coping, as compared to the retaliation coping strategy. Through reciprocal teacher-student interactions, teachers can, directly and indirectly, influence peer-group processes, culture, and behaviour (Farmer et al., 2011), choices and decisions (Hinduja & Patchin, 2013), including how to deal with social problems like cyberbullying (Espelage et al., 2013; Holdfeld, 2013). Studies have also reported that students who have quality relationships with their teachers appear to be well-regulated, socially competent, and have higher levels of self-esteem (Owen & Bub, 2011), which is linked with low reported use of retaliation. Another possible explanation is that assertive individuals not only tend to defend themselves confidently in various challenging social situations (Ma & Jaeger, 2010; Onuoha & Munakata, 2005; Wills et al., 1989) but are also more likely to reach out for social support from significant others than their counterparts who are less assertive (Giménez-Gualdo, 2018).

Study's strengths and limitations

This is one of the first studies to explore the role of parents, teachers, and peers, as well as self-esteem and assertiveness, in influencing adolescent students' choice of retaliation in coping with cyberbullying experiences in a Tanzanian context. Findings are essential for the development of evidence-based educational and interventional programs on adaptive coping strategies with cyberbullying experiences. Although a large sample of 778 students aged 14 and 18 was involved in completing a self-report survey, the sample was only obtained from the two largest commercial cities, making it challenging to generalise results to adolescents in suburban and rural areas. Given that retaliation may be considered differently across cultures (Frey et al., 2015), future self-report data should be cross-validated with qualitative data, for example, interviews, so as to obtain participants' lived perceptions and experiences on the use of retaliation.

Being a cross-sectional study, it is not easy to make a cause-effect conclusion that requires more robust methods such as longitudinal and experimental designs.

Implications and recommendations

This study further provides evidence that different cultures appear to respond differently to retaliation. For example, results showed that a higher level of self-esteem is associated with less reported use of retaliation in coping with cyberbullying compared with a greater level of assertiveness that is linked with higher reported use of retaliation. This suggests a gendered and age-specific intervention and education programmes that enhance positive social relationships and skills that promote self-esteem and responsible assertiveness online.

Although quality parent-child and teacher-child relationships are recommended for positive developmental and behavioural outcomes, the finding that highly assertive adolescents with more positive parent-child relationships are more likely to use retaliation is somewhat unique. Variations in the roles of teachers and parents on adolescents' use of retaliation in coping with cyberbullying indicate that different social contexts, such as family and school have different messages around retaliation. This suggests a need for future research to uncover parents' and teachers' perceptions of retaliation as a coping strategy with social challenges among adolescents.

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