CYBERBULLYING IN TANZANIA: ADOLESCENTS' EXPERIENCES AND THE PSYCHOSOCIAL FACTORS INFLUENCING COPING STRATEGIES

by

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Abstract

Using a socio-ecological model, this study explored Tanzanian adolescents' perspectives on cyberbullying, how they cope with it, as well as how personal factors (social assertiveness and self-esteem), and social factors (relationships with parents, peers, and teachers) influences coping strategies. A total of 778 adolescents, aged 14 to 18 in Form I to Form IV (grades 8 to 11) responded to a self-report questionnaire, and a subset of participants (n = 20), who identified themselves as victims of cyberbullying, participated in follow-up, semi-structured interviews. Results showed that cyberbullying is a concern among Tanzanian adolescents. In particular, victims reported experiencing negative emotional, social, cognitive, behavioural, and academic outcomes as a result of online victimization. Spending more time online, sharing cell phones, and accessing digital devices in a private place were positively related to cybervictimization; although using digital devices in a private place and time online (for older and male adolescents) were positively related to cyberbullying as well. Victims reported using active, avoidance, social support, distraction, and retaliation as coping strategies for a number of reasons including: 1) to relieve stress; 2) to forget and refocus; 3) to hold perpetrators accountable; and, 4) to be inaccessible to the perpetrator(s). Results also indicated that more assertive adolescents with strong relationships with their teachers were less likely to choose distraction and retaliation coping strategies. Unexpectedly, older adolescents with positive relationships with their parents were more likely to adopt retaliation coping. Findings point to the need for culturally relevant cyberbullying education and intervention programs that consider technology, individual characteristics, and social context factors. Implications and suggestions for intervention, practice, and future research are discussed.

Preface

This is an original and unpublished work done by the graduate student, Hezron Zacharia Onditi, supervised by Dr. Jennifer D. Shapka. In cooperation with the research supervisor, the graduate student developed a proposal with clear research design, data collection methods, analyses plan, and recruited participants for the study. The student was responsible for the analysis and in writing the content of this work. Hence, this is a typical work generated by the student as a co-investigator in collaboration with the research supervisor and the research committee members. This research work was approved by the University of British Columbia Behavioural Research Ethics Board (BREB) under certificate number H14-03061.

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Dedication

For my Family and Parents:

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Chapter 1: Introduction

Rapid advancements in Information and Communication Technologies (ICT) have been linked with changes in the way people communicate with each other around the world (Sticca & Perren, 2013). Currently, the use of digital devices, such as mobile phones, computers, and the Internet has not only sped up the rate of information flow and connectivity among people, but it has also made the exchange of information easier and more reliable (Livingstone & Smith, 2014; Sticca & Perren, 2013). Adolescents are the largest users of the modern communication technologies in many countries worldwide (Holfeld & Grabe, 2012; Tokunaga, 2010; Li, Cross, & Smith, 2012). For example, more than 90% of teenagers in developed countries have access to the Internet and over 80% own cellular phones (Holfeld & Grabe, 2012; Tokunaga, 2010). It is also clear that the use of social network sites such as Facebook, Twitter, and Instagram is highest among adolescents, and has changed the way in which they interact with one another (Lenhart, 2012; Runions, 2013).

There are many benefits associated with ICT and social media use among children and adolescents, including communication and socialization (e.g., connecting with peers, friends, and family members), opportunities for skills development, exploring identity and for sharing views about the world (O'Keeffe & Clarke-Pearson, 2011). Children and adolescents use these technologies for entertainment needs (e.g., playing online games, listening to music, and watching videos; O'Neill & Dinh, 2015), and for educational benefits (e.g., use blogs and online platforms as teaching tools, connect with other peers and exchange ideas about assignments or projects; Kafyulilo, 2012; O'Keeffe & Clarke-Pearson, 2011; O'Neill & Dinh, 2015). In addition, the use of ICT and Internet has enhanced adolescents access to health information on various topics (e.g., information about diseases and sexually transmitted infections) easily and privately

(O'Keeffe & Clarke-Pearson, 2011). Despite there being many social, academic, health, and entertainment benefits associated with the use of mobile phones and the Internet (Kafyulilo, 2012; Livingstone & Smith, 2014; Tokunaga, 2010), they have also been linked with maladaptive outcomes such as cyberbullying (Li, 2006; Sticca & Perren, 2013).

Cyberbullying, generally defined as aggressive behaviour carried out using electronic or Internet-based devices (Corcoran, Connolly & O'Moore, 2012; Li, 2006; Smith et al., 2008; Valkenburg & Peter, 2011) has recently become a topic of critical concern for parents, teachers, researchers and practitioners. Studies from North America and Europe have shown that anywhere from 5.5% to 72% (average of 25%) of children and youth have reported being victimized online, and 3% to 44% (average of 18%) of youth have reported being involved in cyber-aggression (Juvoven & Gross, 2008; Patchin & Hinduja, 2012; Li, 2006; Tokunaga, 2010). Indeed, the protection of the screen allows perpetrators to access their target at any place and at any time by sending intimidating texts, or by posting pictures and harassing messages online (Law, Shapka, Hymel, Olson & Waterhouse, 2012). The extensive audience, the permanence of the digitally-posted data, as well as the inability of the victim to escape the harassment contributes to the severe negative outcomes that have been associated with being cyberbullied (Holfeld & Grabe, 2012; Kowalski, Morgan & Limber, 2012), including feelings of anxiety, depression, frustration, anger, sadness, suicidal ideations, and in extreme cases, suicide (Bonanno & Hymel, 2013; Li, 2006; Patchin & Hinduja, 2010; Patchin & Hinduja, 2006).

Coping, defined as cognitive and behavioural efforts used by individuals to deal with various stressful situations (Folkman & Moskowitz, 2004; Lazarus & Folkman, 1984), is an important skill for adolescent functioning and well-being (Folkman & Moskowitz, 2004). Based on many factors, people tend to develop particular coping styles, and the way individuals choose

to cope has a significant impact on their social, physiological, and psychological well-being (Folkman & Moskowitz, 2004; Völlink, Bolman, Dehue, & Jacobs, 2013). Studies have shown that children and adolescents tend to employ different ways in coping with various challenging social situations such as bullying (Hunter & Boyle, 2004; Jacobs, Goossens, Dehue, Völlink & Lechner, 2015). The two widely-used distinctions that explore how individuals cope in challenging stressful situations and which will be discussed in detail later 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, including: avoidance, talking in person with the perpetrator, seeking help from others, blocking perpetrators, or retaliating (Holfeld & Grabe, 2012; Parris, Varjas, Meyers, & Cutts, 2012; Smith et al., 2008; Tokunaga, 2010), However, very little is known about the perceived effectiveness of these strategies. The current study explored this, as well as uncovered various social factors (i.e., child relations with parents, peers, and teachers) and individual factors (i.e., assertiveness and self-esteem) that predict the selection of coping strategies.

Like other developed countries, there is currently a remarkable uptake of ICTs in developing countries such as Tanzania (Hancock, 2005; Kafyulilo, 2012). For example, the use of mobile phones in Africa increased 5,000% between 1993 and 2003 (British Broadcasting Cooperation, 2005). In Tanzania specifically, a survey in 2005 on the use of mobile phones revealed that about 97% of the people surveyed reported having access to mobile phones

(Hancock, 2005). Similar to other parts of the world, adolescents in Tanzania are the largest users of modern ICT technologies, with roughly 6 out of 10 secondary school students owning mobile phones (Kafyulilo, 2012; of important note, many students have their own *SIM cards,* but share phones with friends, which means that a greater number of adolescents have access to mobile technology than the statistics suggest).

We know that the increase in the use of digital devices has been associated with negative outcomes among adolescents in developed countries (Kowalski, Morgan & Limber, 2012; Li, 2006; Patchin & Hinduja, 2006). However, very little is known about the prevalence and nature of cyberbullying within an African context. In particular, there is a paucity of empirical research on cyberbullying and its effects on children and youth in the midst of a rapid uptake of digital communication. Thus, the objectives of this study were twofold: first, to explore the prevalence of cyberbullying experiences among Tanzanian adolescents, focusing on the influence of grade level and gender, and second, to explore how victims coped with cyberbullying and the psychosocial factors influencing coping strategies for adolescents.

Chapter 2: Review of the Literature

2.1 Cyberbullying and Cybervictimization

Researchers, practitioners, and popular mass media have demonstrated that cyberbullying and its associated negative impacts has become an issue of critical concern. However, the frequency and the prevalence rates for cyberbullying have been revealed to vary across studies and countries (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Rachoene & Oyedemi, 2015; Smit, 2015; Tokunaga, 2010). Although some studies have indicated low prevalence rates at or below 25% (Patchin & Hinduja, 2012; Li, 2006), others have reported higher prevalence rates of up to 72% (Juvoven & Gross, 2008). A meta-synthesis on cyberbullying (Tokunaga, 2010) reveals that, on average, 20-40% of all youths have been victimized, harassed, or threatened through electronic or Internet-based devices. As reported by Patchin and Hinduja (2012), cyber perpetration rates range from 3% to 44%.

To date, the majority of published research studies on cyberbullying are from North America and Europe, as well as a few studies from Asia (Genta et al., 2012; Livingstone & Smith, 2014; Strohmeier, Aoyama, Gradinger, & Toda, 2013). Across these geographic areas, there are variations in prevalence rates. For example, in Finland, although 94% of Finnish children below age 17 have access to the Internet and 87% have cellular phones, reports on the frequency of cyberbullying incidents are low compared to traditional face-to-face bullying (Salmivalli & Poyhonen, 2012). The same pattern is also true in Canada and the United States of America (Lenhart, 2012). According to Salmivalli and colleagues (2012), only 1% of Finnish children reported having been victimized electronically and only 2% admitted to having bullied others online. In contrast, in Austria, Gradinger, Strohmeier, and Spiel (2012) found that 43% and 47% of girls and boys, respectively, reported having bullied others offline, but only about

7% of students involved in the study indicated that they had cyberbullied others. From the same study, 59% of girls and 50% of boys admitted to having been bullied offline, but only 13% and 8% of girls and boys, respectively, reported being victimized online. Studies cited in Tippett and Kwak (2012) indicated that while 93% of South Korean students own mobile phones and 99.9% have access to the Internet, only 10% of them reported being cybervictimized. Interestingly, these authors found that the rate of cyberbullying surpassed that of traditional bullying when online game bullying was included.

Other cross-cultural research has revealed similar rates of cyberbullying in Italy, England, and Spain, with higher incidents of cyberbullying being reported in Italy than in Spain (Genta et al., 2012). With more than 97% of teenagers having access to the Internet in the U.S. (Tokunaga, 2010), a cross-cultural study reported a considerably lower rate of cyberbullying in Japan compared to the U.S. (Aoyama, Utsumi, & Hasegawa, 2012). In particular, while 20% of participants from the U.S. reported being cyberbullied and 14.5% admitted to engaging in cyberbullying others, only 8.6% of Japanese participants said they had been victimized online and 4.3% admitted being involved in cyber-bullying perpetration.

It has been argued that the variations in prevalence rates across studies may be due to measurement issues that have yet to be resolved (Dooley et al., 2009; Tokunaga, 2010). For example, some studies employ global measures that ask how often a person engages in cyberbullying (usually a definition is provided); whereas other studies have items that tap into specific behaviours that are related to cyberbullying (Dooley et al., 2009). Apart from their strengths, both measurement approaches have been associated with some problems. For instance, global measures have been linked to lower estimates in cyberbullying (Dooley et al., 2009; Gradinger et al., 2010). Behavioral measures seem to be more accurate relative to global

measures, and tend to be the preferred way to measure this construct (Shapka, 2014), However, amassing the correct list of behaviours that describes the phenomenon remains a challenge amidst the constant changes and advancements in ICTs (Dooley et al., 2009). For the purpose of this study, a behavioural-specific measure of cyberbullying was used (Shapka, 2014; described in more detailed in the method section). As pointed out earlier, the behavioural-specific measures seem to be more accurate and allow for the ability to tap into a broad range of behaviours associated with cyberbullying, a phenomenon that has yet to be explored in Tanzania. Behavioral-specific measures may also work better in contexts like Tanzania where participants have little prior global knowledge about cyberbullying as a construct.

The variations in the prevalence rates may also be associated with local and national anti-bullying policies in some countries. In fact, it is argued that the rate of cyberbullying has begun to decline in countries such as Finland due to the existence of effective anti-bullying programs and policies such as "KiVa" (Salmivalli & Poyhonen, 2012). For example, the rate of cyberbullying decreased by 36% in schools that were implementing KiVa program. In contrast, cyberbullying increased by 14% in the control schools that were not involved in KiVa (Salmivalli & Poyhonen, 2012) and cyberbullying has been reported to be higher in other countries, such as Italy, where there is a lack of clear national policy on cyberbullying (Gental et al., 2012). In a cross-national study among adolescents in 40-countries, Craig et al. (2009) revealed that bullying and victimization is a problem of health concern that can be well understood by having national data and cross-national comparisons. Unfortunately, while some countries are making efforts to develop anti-bullying programs, and some have begun to notice a decline in the rate of cyberbullying, many countries from Africa, including Tanzania, have yet to yield valid information about its prevalence and nature.

In addition to measurement issues, there are definitional issues around the construct of cyberbullying. For example, a meta-synthesis study by Tokunaga (2010) revealed that researchers have offered various definitions of cyberbullying over the past decade, although most of them are rooted conceptually in traditional definitions of schoolyard bullying, which defines bullying as an act of aggression where there is power differential, that is intentional, and is repeated over time (Dooley, Pyzalski, & Cross, 2009; Kowalski et al., 2014). In attempts to provide consistency in the definition's application, Tokunaga (2010) defined cyberbullying as "any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others" (p, 278). Although this definition seems to be integrative, and is certainly conceptually linked to traditional forms of bullying, definitional issues still plague the field of cyberbullying and many researchers have shown that cyberbullying is not as conceptually similar to traditional forms of bullying as originally thought (Bonanno & Hymel, 2013; Law, Shapka, Hymel, & Waterhouse, 2009). For example, the aspect of repetition of the bullying behaviours, which is an important characteristic of traditional, face-to-face bullying, is not only the main necessary requirement for one to experience the negative impacts of cyberbullying. This is because even a single hostile piece of information posted online can have severe negative impacts on victims due to the multiplier effects of information being re-posted by various people very quickly and over time. To this end, a single online action such as uploading or circulating a photo of an individual meant to embarrass or harass a victim, or sending a nasty message or a derogatory comment, can have long-term detrimental impact on a person's well-being (Dooley, Pyzalski, & Cross, 2009).

Despite the overlap between traditional and cyberbullying, research has shown that there are unique features that separate the two forms of bullying (Law, Shapka, Hymel, & Waterhouse, 2009). Unlike traditional bullying that is accompanied by observable non-verbal behaviours, a victim of cyberbullying may sometimes have a hard time judging whether an action is intentional or not, due to the lack of non-verbal cues (Kowalski & Limber, 2007). Therefore, how the victim processes and interprets online communication is crucial for determining cyberbullying actions or reactions. In addition, the anonymity that comes with using a computer or an electrical device (Slonje & Smith, 2008) means that some of the adolescents involved in harassing or hurting others online do not realize the negative impacts of their behaviour on victims (Holfeld & Grabe, 2012). Although there is often a presumption of anonymity, there is evidence suggesting that cyberbullying also occur among friends, classmates and acquaintances (Roberto, Eden, Savage, Ramos-Salazar, & Deiss, 2014). Regarding power, whereas popularity, social status, physical and academic power traditionally are associated with offline bullying, the power imbalance between those who are victims of online bullying and those who engage in online bullying is not always a factor (Patchin &Hinduja, 2006). In the virtual world, an adolescent who may be described as less powerful offline can be powerful online if their technological skills are used in such a way to balance the power between the individual and his or her peers (Law, Shapka, Domene, & Gagne, 2012a). Finally, although traditional fact-to-face bullying most often occurs during school hours, cyberbullying can happen anywhere and at anytime of the day/night (Dooley et al., 2009; Holfeld & Grabe, 2012; Tokunaga, 2010) often outside the control or supervision of adults (Dehue, Bolman, &Völlink, 2008; Holfeld & Grabe, 2012; Patchin & Hinduja, 2006). Though adults are directly involved and schools have policies in place to address traditional bullying, how adults serve to regulate harassment among and between teenagers in the

virtual world is still a complex and poorly understood problem (Dehue et al., 2008; Kowalski et al., 2014).

Research has shown that victims of cyberbullying are also often targets of traditional bullying, suggesting that, despite the unique characteristics of each type of aggression, there is overlap between the two (Kowalski et al., 2012; Espelage, Rao, & Craven, 2013; Riebel, Jaeger, & Fischer, 2009; Ybarra, Diener-West, & Leaf, 2007). We also know that victims of traditional and cyberbullying often report similar negative outcomes (Sticca & Perren, 2013). However, in some cases, it appears that adolescents who are the victims of cyberbullying may be more susceptible to depressive symptoms and suicidal ideation compared to involvement in traditional bullying (Bonanno & Hymel, 2013). It has been postulated that this is due to the constant presence and permanence of digital media, such that young people can't find respite from aggression that is occurring online (Kowalski & Limber, 2007; Runions, Shapka, Dooley, & Modecki, 2013; Tokunaga, 2010).

2.2 Social Ecological Framework and Cyberbullying

Like other human behaviours, cyberbullying does not occur in a vacuum. Rather, it is a behaviour that is influenced and conditioned through social interactions within social environmental contexts (Hinduja & Patchin, 2013; Holfeld, 2013). Social Ecological Theory is one of the models through which to examine adolescents' involvement in cyberbullying behaviours as well as consequent coping strategies. According to this model, the behaviour of an individual (e.g., cyberbullying; coping) is a function of the interaction between personal characteristics and external environmental factors (Bronfenbrenner, 2005, 1979; Swearer & Espelage, 2004). In particular, the model posits that an individual child and/or adolescent's behaviour is influenced by a series of interrelated systems (Bronfenbrenner, 2005, 1979), which

include: 1) the *microsystem*, which entails the processes that take place within the immediate social environment where a child has direct contact with family, peers, the school environment, etc.; 2) the *mesosystem*, which comprises the interactions and processes that take place between two or more systems involving the child/adolescent (e.g., parent-teacher meetings); 3) the *exosystem*, which involves linkages and processes between two or more settings where a child has no direct contact in one of the settings, but the ongoing processes and events may have indirect influence on the child's development through his or her immediate settings (e.g., home and parent's workplace relationships); 4) the *macrosystem*, which involves influences from a developing child's larger environment such as the overarching society, culture, ideologies, or social institutions; and, 5) the *chronosystem*, which includes the dimension of time, and refers to the changes in the biological and psychological structures of the developing individual throughout their life course.

Given that Bronfenbrenner's (1979) ecological systems theory emerged prior to the rapid advancements and increase in modern ICT devices in children's and adolescents' environment (Johnson, 2010), there are some authors (see; Johnson, 2010; Johnson & Puplampu, 2008; Martin & Stuart, 2011) who have begun to adapt the model by incorporating the cyberspace. In particular, Johnson and Puplampu (2008, p.23) proposed "the *ecological techno-subsystem* (a dimension of the microsystem) which includes a developing child interactions with both living/human communicators (e.g., peers) and nonliving/nonhuman elements (e.g., hardware) of ICT within the immediate environment. Other scholars (e.g., Martin & Stuart, 2011) have begun to reconceptualise and to extend the ecological systems theory to include *cybersystem* dimension, which involves youth interactions in the cyberspace (a new ecology of a developing child).

The Social Ecological Theoretical framework has been successfully applied and is a recommended model for studying the constructs of bullying and victimization (Espelage & Swearer, 2009; Law, 2009; Olweus, 1993, Swearer et al., 2006; Swearer & Espelage, 2004; Swearer & Doll, 2001; Swearer et al., 2012). According to this framework, bullying arises in the process of bidirectional interactions between children/adolescents and their family, peers, school environment, and the larger social context (Bauman, 2010; Espelage & Swearer, 2009; Swearer & Espelage, 2004; Swearer et al., 2012). In other words, bullying is a function of bidirectional interactions between individual child characteristics and his or her social context (Swearer & Doll, 2001). Like traditional bullying, studies have also established that cyberbullying occurs as a result of a complex interplay between adolescents and their social environments (Bauman, 2010; Espelage, Rao, & Craven et al., 2013; Hinduja & Patchin, 2013; Holfeld, 2013; Law, 2009). The social environment, including peer group, family, school environment, cultural and community factors, are undoubtedly related to the rise of cyberbullying and victimization (Hinduja & Patchin, 2013), but they may also influence how adolescents evaluate and respond to cyberbullying (Holfeld, 2013). According to Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Rand (1986), "particular person and situation variables together shape coping efforts" (p. 993). In this regard, and from a Social Ecological perspective, it is possible that both cyberbullying and coping behaviours are a function of the daily interactions between individual child or adolescent characteristics and their proximal and distal contextual factors.

It is beyond the scope of this study to explore the entire Social Ecological Model. As such, this study focuses on pertinent relationships at the microsystem level, which encompasses factors and contexts that have an immediate, direct influence on a developing child (Bronfenbrenner, 2005, 1979; Espelage et al., 2013; Holdfeld, 2013; Swearer & Espelage, 2004).

Specifically, this work explored the interplay between individual characteristics of adolescents (e.g., demographic factors such as gender and grade, as well as psychosocial factors such as self-esteem and social assertiveness) and the contextual factors (parents, peers, and teachers) in relation to the experiences of cyberbullying and coping strategies.

2.3 Individual Characteristics and Cyberbullying and Cybervictimization

From a social ecological framework, Swearer et al. (2006) argue that the demographic and individual psychosocial variables interact with other social contexts in the bullying episodes. Below is an overview of the variables most relevant to the current study.

*Gender***.** Demographic information such as gender can provide insights that inform intervention programs across fields (Tokunaga, 2010). However, researchers have reported mixed findings with regard to the relationship between gender and cyberbullying perpetration and cybervictimization (Kowalski et al., 2014; Tokunaga, 2010). While some studies have reported no gender differences (Hinduja & Patchin, 2008; Li, 2006; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Slonje & Smith, 2008), other findings support gender differences (Salmivalli & Poyhonen, 2012; Tsitsika et al., 2015).

Looking cross culturally, it appears that Finnish boys seem to be more targeted and involved in cyber perpetration than girls (Salmivalli & Poyhonen, 2012). The opposite is true in the U.S. where females are more likely to be both targets and the perpetrators of cyberbullying (Bauman, 2012; Holfeld & Grabe, 2012). Females in Austria, Canada, Australia, and Italy are more likely to be victimized online than boys, although boys are reported to be frequent perpetrators (Cross et al., 2012; Gradinger et al., 2012; Li, 2007; Li, 2006; Menesini, Calussi, & Nocentini, 2012). In another study from three European countries - Italy, England, and Spain (Genta et al., 2012), more boys were reported to engage in cyber perpetration than girls, but a

little difference was found with regard to cybervictimization with girls more likely to be victimized than boys. Against this backdrop, the discrepancy in gender and cyberbullying perpetration and cybervictimization has yet to be resolved, opening up a window for further studies, especially in contexts such as Tanzania where little is known about this particular phenomenon. In particular, whether female and male adolescents from Tanzania differ in cyberbullying and cybervictimization experiences remains unclear. The current work was designed to shed light on this.

*Age and Grade Level***.** Having clear and valid information regarding the age or grade level at which cyberbullying is most prevalent is another important factor for developing effective intervention efforts (Kowalski et al., 2014; Tokunaga, 2010). In a review by Tokunaga (2010), studies exploring the relationship between age and cyberbullying tend to focus more on the grade level where the behaviour is most prevalent so as to guide proper allocation of resources and prevention programs. As with gender, there are mixed findings when it comes to the relationship between age and rates of cyberbullying and cybervictimization. While some studies demonstrate no association between age and cybervictimization (Beran & Li, 2007; Juvoven & Gross, 2008; Patchin & Hinduja, 2006; Smith et al., 2008), other researchers support the existence of a relationship (Dehue et al., 2008; Hinduja & Patchin 2008; Kowalski & Limber, 2007; Sloje & Smith, 2008).

More specifically and from a cross cultural perspective, a study with grade 5 to 8 students in the U.S, Bauman (2012) found no grade differences on cybervictimization, although a significant difference was found in cyberbullying perpetration which increased in higher grades. In a study of cyberbullying among grade 7 to 9 students in South Korea, Tippett and Kwak (2012) identified no significant age differences in cyberbullying victimization and perpetration.

Other studies with teenagers in grade 6 to 8 and aged 10-17 years in the U.S (Kowalski & Limber, 2007; Ybarra et al., 2006, respectively) found a positive association between grade level and cyber perpetration and victimization, with students in higher grades reporting more experiences of the two behaviours. A similar pattern was demonstrated in a recent meta-analysis study (Kowalski et al., 2014) indicating high prevalence in grade 7 through 10, and in a study with adolescents in grade 7 to 12 in Portugal where cyberbullying and cybervictimization increased across grade levels (Almeida, Correia, Marinho, & Garcia, 2012). This trend is corroborated by research that explores cyberbullying among fifth, eighth, and eleventh grade students (transition years in elementary, middle, and high school) in the U.S (Williams & Guerra, 2007) with lower rates of cyber perpetration found among fifth graders as compared to their peers in higher grades. However, in the same study, cyberbullying appeared to peak in eighth grade and then drop as students approached high school. This finding is consistent with results of a study of 12- to 20-year-old students in Sweden by Slonje and Smith (2008) who found a negative association between age and cyberbullying perpetration and victimization, with students aged 12 to 15 years reporting higher levels of the two behaviours than their counterparts aged 16 to 20 years. Indeed, a review by Tokunaga (2010) concluded that cyberbullying follows a curvilinear pattern with the peak occurring in grades seven and eight. Whether a similar pattern would exist in a Tanzanian context remains unclear.

From a Tanzanian experience, adolescents in higher grades are more likely to have access to digital devices such as mobile phones and the Internet than their younger counterparts. Given that higher access to digital devices (Holfeld & Grabe, 2012; Salmivalli & Poyhonen, 2012) and time spent online (Kowalski et al., 2014; Mishna et al., 2012; Shapka & Law, 2013) increases the likelihood of getting involved in cyberbullying behaviours, it is hypothesized that the rate of

cyberbullying among Tanzanian adolescents will vary across four grade levels —Form I, Form II, Form III, and Form IV (i.e., grades 8 to 11)—when students are between 14 and 18 years of age.

Self-Esteem. Self-esteem and self-concept have been commonly used in the description of self- perceptions (Harter, 1999). Whereas self-concept has been described as individual's perceptions or beliefs about her/his own characteristics, abilities, and weaknesses (McDevitt & Ormrod, 2013), self-esteem is the positive or negative evaluation aspect of the self-concept (Rosen & Patterson, 2011), including an evaluation of individual's own value and self-worth (Harter, 1999). In particular, how an individual evaluates him/herself changes significantly during adolescence due to the intertwined physical, social, emotional, and cognitive changes (Arnett, 1999). The pubertal and developmental changes occurring during adolescence tend to heighten adolescents' risk for problem behaviours and how they perceive themselves (Steinberg, 2004).

From a Social Ecological framework, global self-esteem is a product of the bidirectional, continuous interactions between a developing child or adolescent and significant adults or peers across social contexts (Harter, 1999; Rosen & Patterson, 2011). A large number of studies have consistently linked self-esteem with a host of life outcomes (Card, Isaacs, & Hodges, 2007; Harter, 1999; Marsh et al., 2011; Rosen & Patterson, 2011; Yao et al., 2014). In particular, researchers investigating both traditional bullying and cyberbullying have identified self-esteem as an important and controversial psychosocial construct in bullying behaviours (Card et al., 2007; Espelage et al., 2013; Holfeld & Grabe, 2012; Marsh et al., 2011; Marsh, Parada, Yeung, & Healey, 2001; Onditi, Law, Baitz, & Shapka, 2014; Patchin & Hinduja, 2010).

Regarding traditional forms of bullying, studies have reported mixed results on the relationship between self-esteem and involvement in bullying behaviours. For instance, whereas some studies have reported a link between lower self-esteem to greater levels of involvement in aggressive behaviours and being victimized (Blood et al., 2011), others have reported a link between high self-esteem and engagement in aggression and bullying (Espelage et al., 2013). 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. Additionally, Espelage et al. (2013) and Blood et al. (2011) noted that being victimized is associated with lower perceptions of self-esteem. Another study on bullying and victimization among grades 7 and 8 (Seals & Young, 2003) found no significant differences in self-esteem between bullies, victims, non-victims, and non-bullies. Similarly, a longitudinal study with elementary, middle, and high school students found that self-esteem predicted bullying perpetration in time 2 after controlling for bullying in time1 (Gendra, Williams, & Guerra, 2011). In the same study, Gendra and colleagues noted that perception of school climate moderated the effect of self-esteem on bullying perpetration. In particular, findings indicated that high self-esteem predicted bullying perpetration when students have a negative perception of school climate and was associated with lower levels of bullying when students have a positive perception of school climate. Other longitudinal studies of traditional bullying (Marsh et al., 2001) and those cited in Card et al. (2007) found that victimization predicted a decrease in self-esteem.

Findings from the cyberbullying literature have shown a similar pattern, although with mixed results regarding the relationship between self-esteem and cyberbullying experiences (Law, 2009; Patchin & Hinduja, 2010; Onditi et al., 2014). For example, in a study by Patchin

and Hinduja (2010), both online perpetrators and victims reported lower levels of self-esteem. Research findings by Holfeld and Grabe (2012) also revealed a link between lower levels of self-esteem and cybervictimization. These findings are consistent with the results from Onditi et al. (2014) who reported a negative association between global self-worth and adolescents' involvement in cyber perpetration. However, these findings are in contrast to the results of Law (2009), who showed that the higher the level of self-esteem, the higher the level of online aggression and vice versa. From longitudinal work reviewed by Card et al. (2007) and those cited in (Espelage et al., 2013), how a child or an adolescent evaluates himself or herself, positively or negatively, can lead to either cyber perpetration or cybervictimization, and may have influence on how they cope with various situations in life.

Coping. With regard to coping, existing research has consistently reported a link between self-esteem and coping strategies (Byrne, 2000; Chapman & Mullis, 1999; Dolenc, 2015; Lam, Alvarado, & Lee, 2014; Mota & Matos, 2014; Stanley & Arora, 1998). Findings in a study by Chapman and Mullis (1999) on the relationship between self-esteem and coping in adolescents showed that individuals with lower levels of self-esteem employed different ways of coping, such as venting feelings, relaxing or doing nothing, and avoidance; whereas those who scored high in self-esteem preferred to use direct, problem-focused coping strategies. Findings from a recent study examining the influence of social relations and self-esteem on coping among Portuguese adolescents (Mota & Matos, 2014) also indicated that both higher levels of self-esteem and quality relations with peers predicted the use of active coping strategies.

There is evidence that the relationship between self-esteem and coping may be universal. For example, a 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.

Based on the existing literature, for the current study it is anticipated that those adolescents who evaluate themselves positively are more likely to use direct coping strategies such as problem-focused or active coping when in crisis situations than those who evaluate themselves negatively. Adolescents who evaluate themselves more negatively might rely more on indirect coping strategies such passive coping, which unfortunately, has been associated with increased risk of suicidal ideations (Yao et al., 2014).

*Assertiveness***.** Assertiveness is 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 (Duckworth & Mercer, 2006; Ma & Jaeger, 2010; Onuoha & Munakata; 2005; Rathus, 1975; Wills, Baker, & Botvin, 1989). Depending on the context, studies have reported various dimensions of assertive behaviour, such as sexual assertiveness and social assertiveness (Onuoha & Munakata, 2005), as well as substance-specific assertiveness, dating assertiveness, rights assertiveness, and general assertiveness (Gambrill & Richey, 1975; Wills & Botvin, 1989). The need for assertiveness has been consistently recognized in different social settings including the workplace, with friends, at home, and at school (Bell, McGhee, & Duffey, 1986; Onuoha & Munakata; 2005; Wills et al., 1989). Given that cyberbullying behaviours occur in online social interactions, this study focused on general social assertiveness, which represents assertion behaviours in everyday social situations (Onuoha & Munakata; 2005; Wills et al., 1989).

Although studies have consistently linked high social assertiveness with positive outcomes (Eskin, 2003; Ma & Jaeger, 2010; Onuoha & Munakata; 2005), other studies, including a study on assertiveness and substance use among US adolescents (Will et al.,1989), found that adolescents who scored high in social and dating assertiveness were more likely to engage in alcohol use and in smoking behaviours, while those who scored high in substance use assertiveness were less likely to engage in alcohol use and in smoking behaviours. To this end, the implications of assertiveness may largely depend on the situational context.

Although studies relating assertiveness and coping are limited, the existing body of literature indicates that individuals with higher levels of assertiveness cope better in stressful situations than individuals who are less assertive (Schill, Toves, & Ramanaiah, 1981; Tank & Robbins, 1979; Tomaka et al., 1999). As suggested by Rathus (1975), individuals who are assertive prefer to employ more adaptive coping behaviours, such as defending themselves appropriately in social conflicts, compared to less assertive individuals. In an experimental study on assertiveness and stress among nurses (Lee, & Crockett, 1994), nurses who received training on assertiveness consistently demonstrated high levels of assertiveness and coped better with work-related stress than nurses from the control group who did not receive such training. Similarly, findings from a study examining coping with feelings of tension among undergraduate students (Tank & Robbins, 1979) revealed that students with high scores on assertiveness consistently demonstrated the use of problem-solving or direct coping strategies; whereas those students with low scores on assertiveness tended to isolate themselves, to express anger, and/or to passively endure the discomfort. Finally, in examining the effects of assertiveness in response to the impromptu presentation among undergraduate students, Tomaka et al. (1999) found that more highly assertive women considered the task as less demanding, displayed adaptive coping,

and gave better presentation; while lower assertive women appraised the task as demanding, displayed lower coping ability and performed lower on the task.

In general, research has shown that children and adolescents who are socially assertive are more capable of communicating their needs, requests, and opinions openly to their parents, caretakers, and siblings, and may defend their rights assertively in peer interactions (Hickson & Boxford, 1999; Mayar & Ulich, 2009; Miguelsanz, Martin, & Martinez, 2012; Rubin et al., 2011). In this regard, high levels of general social assertiveness may lead adolescents to act assertively when in a potential victimization situation, while adolescents with lower levels of social assertiveness may be worried and behave submissively or aggressively, making them more vulnerable for further victimization or more likely to engage in bully-victim behaviours (which is of heightened concern in the cyberspace context; Espelage et al., 2013). As pointed out by Roberts (2001), individuals who are not assertive can be easily mistreated, harassed or abused in various social contexts, including cyberspace. However, how assertiveness influences adolescents' coping strategies with cyberbullying experiences remains unclear, and is a question that this study was designed to address.

2.4 Adolescents and Social Contexts

From a socio-ecological framework, the reciprocal interactions that occur in social contexts such as family, peer groups, and school can have a significant impact on the developmental trajectories of children, including how they interpret, respond to, or cope with various stressful events in life such as cyberbullying (Espelage et al., 2013; Holdfeld, 2013). Below is an overview of the relevant social contexts for the current work.

Family context. Family is an important social context for a developing child or adolescent. Although a family may consist of several primary caregivers, researchers, theorists,

and practitioners acknowledge the important role of parent-child relationships in influencing child and adolescent development (Nickerson, Mele, & Osborne-Oliver, 2010; McDevitt & Ormrod, 2013). From an attachment theory perspective, Bowlby (1969), as well as Ainsworth and Bowlby (1991), have argued that children who are more securely attached to their primary caregiver(s) experience more success in terms of various developmental outcomes. The close parent-child relationship provides a strong basis for developing a child's sense of self (Birkeland, Breivik, & Wold, 2014). We also know from Baumrind's (1966) parenting typologies and from other research (Birkeland et al., 2014) that a child with parents who are emotionally available, loving, and caring are more likely to experience positive developmental outcomes. From social support perspective (Holden, Vittrup, & Rosen, 2011; Nickerson et al., 2010), all children and adolescents benefit from high quality parent-child relationships. The key forms of social support essential in parent-child relationships (Holden et al., 2011; Nickerson et al., 2010) include: 1) emotional support; 2) provision of relevant information including guidance and advice; 3) instrumental support such as providing adolescents with materials and time for dialogue and social connection; and 4) autonomy support including respecting children and encouraging individuality.

Studies have consistently reported that children and adolescents who have positive relationships with and feel socially supported by their parents are well-regulated, socially competent, and report higher levels of self-esteem and life satisfaction (Birkeland et al., 2014; Demaray, Malecki, Davidson, Hodgson, & Rebus, 2005). Higher levels of social support and positive parent-child relationships are not only important for buffering children and adolescents from stress and its associated negative outcomes (Rubin et al., 2004), but they can also influence the use of adaptive coping strategies (e.g., problem-focused coping and social support-seeking)

when in crisis situations (Cohen et al., 2001; Cohen & Wills, 1985). 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 internalizing behaviours (e.g., loneliness, hopelessness) and externalizing behaviours (e.g., aggression and delinquency; Holden et al., 2011; Nickerson et al., 2010; Rubin et al., 2004). In particular, Bonanno and Hymel (2010) pointed out that feelings of social hopelessness and lack of social support from one's family were associated with greater suicidal ideation in children who are victimized. Accordingly, adolescents who feel socially hopeless and lack social support from their family are expected to be more likely to use less direct coping strategies in stressful events.

Regarding the current study, as child and adolescent socialization has extended from face-to-face contexts to the virtual world, parents often feel as though they have less direct access to their children and are unaware that they are involved in cyberbullying (Dehue et al., 2008). In fact, due to a digital divide that exists between parents and their children, adolescents often do not feel supported by their parents about issues such as cyberbullying (Aoyama, Utsumi, & Hasegawa, 2012; Smith et al., 2008). Accordingly, the current research focused specifically on Tanzanian adolescents' perceptions of closeness and support from parents with regard to coping with cyberbullying.

Peer groups. Another important issue that was explored in this dissertation is the role of peers in coping with cyberbullying. As children approach adolescence, peer networks and friendships become the most common and dominant source of socialization (Birkeland et al., 2014; Holdfeld, 2013; Rubin et al., 2011). This is in part due to the fact that peer relationships are more likely to be balanced along commonly shared attributes such as age, interests, and goals (Bukowski, Buhrmester, & Underwood, 2011; Rubin et al., 2011). Generally, peer interactions

occur in various social contexts such as classrooms, playgrounds, and now, as noted above, via the Internet (Bukowski et al., 2011). Studies have shown that peer groups have a crucial impact on individual behavioural functioning and adjustment (Birkeland et al., 2014; Harris, 1995, 2009). In their interactions, peers tend to model, imitate, reward, and punish members for positive or negative behaviours (Bukowski et al., 2011; Rubin et al., 2011). Rubin et al. pointed out that peer groups provide a context for practicing social skills, emotional support to cope with stressful situations, support for identity construction, and an environment for developing and reinforcing culturally-appropriate behaviours and discouraging or punishing inappropriate ones. In other words, peer groups provide a platform for adolescents, to learn, unlearn, and relearn both prosocial and antisocial behaviours (Gourneau, 2012).

Researchers, theorists and practitioners have identified peer acceptance and rejection or isolation as a common phenomenon in peer group processes (Bukowski et al., 2011; 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). This is true of for young children and adolescents, but also for adults (Birkeland et al., 2014; Bukowski et al., 2011). Adolescents who have positive peer experiences tend to be well adjusted and protected from negative experiences such as peer victimization (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 internalizing disorders (e.g., depression, low self-concept, low self-esteem, loneliness, etc.) and externalizing behaviour problems, including delinquency (Birkeland et al., 2014; Bukowski et al., 2011; McDougall, Hymel, Vaillacourt, & Mercer, 2001). Indeed, in a review of the impact of peer rejection, McDougall et al. (2001) found that both retrospective and

longitudinal studies have demonstrated links between lower levels of acceptance by peers and criminality in later years. The same review provided evidence that rejected children tend to express higher levels of loneliness and social dissatisfaction than their counterpart peers who feel more accepted in peer groups. Children who are well integrated in peer groups may be more likely to use adaptive coping strategies such as seeking social support in stressful events than their counterparts who feel less accepted or isolated from peers.

With regard to bullying, peers have the ability to deflate a bully's power (Gourneau, 2012; Hawkins, Pepler, & Craig, 2001), and to help victims find relief, hope, comfort, strength, and the confidence required to reach out for help or to stand up for themselves (Gourneau, 2012). A recent study with Portuguese adolescents reported a positive association between quality peer relationships, self-esteem, and active coping in challenging situations (Mota & Matos, 2014).

In both traditional and online bullying, studies have consistently reported that peers are more likely to intervene when friends are victimized than when a victim is not a member of their group (Barlińska, Szuster, & Winiewski, 2013; Bastiaensens et al., 2014; Forsberg et al., 2014; Thornberg & Jungert, 2013; Thornberg et al., 2012). For example, socially connected peers are more likely to have friends to stand up or to support them from victimization compared with their counterpart peers who experience rejection or isolation from their peers. For example, having peers or friends who intervenes may not only enhance victim's confidence to reach out for support but may also buffer individual from frequent bullying and its associated negative effects. To this end, we may argue that the bidirectional interactions between an adolescent and his or her peer group can have a significant influence on cyberbullying behaviours. However, how these relationships impact the selection of coping strategies with harassment in the virtual world remains an important, but understudied area of investigation. Therefore, this study

explored perceptions of Tanzanian adolescents with regard to how they feel connected and supported with other peers and how such perceptions are related to their efforts to cope with cyberbullying.

Teacher-Child Relationships. In schools, studies have shown that teachers are the most important and influential adults in the lives of children and adolescents (Eccles & Roeser, 2011; Elledge et al., 2013; Owen & Bub, 2011). Teachers have both a direct and indirect ability to guide and to influence children's and adolescents' choices and decisions (Hinduja & Patchin, 2013). From theories of attachment (Bowlby, 1969; Ainsworth & Bowlby, 1991), ethics of care (Noddings, 1988), as well as social support (Holden et al., 2011; Nickerson et al., 2010), positive teacher-child relationships are established when teachers demonstrate genuine warmth, support, and care for all students irrespective of their background. From a researchers' viewpoint, teachers are recognized as "invisible hands" impacting peer group processes and culture (Farmer, McAuliffe Lines, & Hamm, 2011). Students who feel both physically and psychologically cared for by teachers appear to be socially and emotionally well-regulated (Owen & Bub, 2011). Owen and Bub further pointed out that adolescents' feelings of being cared for or supported by teachers contribute to enhanced self-esteem and confidence to reach out for help when in stressful situations. In this regard, children and adolescents who have quality relationships with their teachers may be more likely to use adaptive coping strategies (e.g., social support from teachers) in stressful events, compared to their counterparts who feel less cared for by teachers.

According to Eccles and Roeser (2011), quality interactions between teachers and adolescents insulate teenagers from a wide range of risk behaviours including bullying and its associated negative impacts. This notion gets support from findings by Hinduja and Patchin (2013) showing that cyberbullying decreased significantly when students perceived adults,

including their teachers, as effective interveners. In contrast Elledge et al. (2013) found that cyberbullying was high in classrooms in which students collectively perceived their teachers as high interveners for school bullying. In this case, students resorted to cyberbullying because they knew that the teacher would respond to other direct forms of bullying, but not to cyberbullying. Consistent with these arguments, other research has demonstrated that adolescents are reluctant to ask for help or support from adults or teachers about cyberbullying experiences because they either think that an adult can't help them or they fear that the adult will take their technology away (Dehue et al., 2008; Smith et al., 2008). The fact that students are not reaching out to seek help from adults, especially teachers, with online bullying experiences is important and raises a question about the nature of teacher-student relationships. For the present study, it is hypothesized that students' feelings of being integrated and supported by teachers may encourage them to disclose online bullying incidents, which might in turn lead to effective coping with cyberbullying. The present study was aimed at exploring whether teacher-student relationships also impact how Tanzanian students cope with cyberbullying.

In summary, Social Ecological Theory is an important lens through which we can understand the role of bidirectional interactions in various social contexts–family, school, and peer groups–that may impact child and adolescent development. From this theoretical framework, healthy relationships with parents, teachers, and peers are not only important but essential conditions for healthy developmental outcomes. However, what has been missing in the empirical literature, especially in the Tanzanian context, is an examination of the perceived relations students have with parents, teachers, and peers and how these might impact students' strategies for coping with cyberbullying. Of interest in the present study, then, was whether and

how peer, parent-child, and teacher-student relationships impact how Tanzanian adolescents cope with bullying that occurs online, a newly pervasive social context.

2.5 Consequences of Cyberbullying

Studies have linked cyberbullying with a host of negative outcomes for victims. These can range from mild to severe psychosocial problems (Tokunaga, 2010). Specifically, cyberbullying has been associated with a drop in academic performance (Beran & Li, 2007), truancy from school (Katzer et al., 2009; Kowalski & Limber, 2013), and carrying weapons to school (Ybarra et al., 2007). Other studies have linked cyberbullying with anxiety and emotional disorders (Juvoven & Gross, 2008; Kowalski & Limber, 2013), poor relationships with family (Patchin & Hinduja, 2006), and low levels of self-esteem (Katzer et al., 2009; Kowalski & Limber, 2013). Victims of cyberbullying are also found to report feelings of depression, frustration, anger, fear, and sadness (Kowalski et al., 2014; Kowalski & Limber, 2013), greater suicidal ideation (Bonanno & Hymel, 2013), and in extreme cases, suicide (Hinduja & Patchin, 2010; Li, 2006; Patchin & Hinduja, 2006). Given the evidence that the negative effects of cyberbullying are partly buffered by the coping strategies employed by individuals (Jacobs, Dehue, Völlink, & Lechner, 2014; Völlink, Bolman, Dehue, & Jacobs, 2013), and given that cyberbullying is a unique form of bullying (Law et al., 2012b; Bonanno & Hymel, 2013) and that very little is known in a Tanzanian context, it is also important to understand *how* Tanzanian adolescents cope with cyberbullying and the factors influencing their selection of coping strategies.

2.6 Coping

As noted earlier, coping refers to various cognitive and behavioural efforts employed by an individual to deal with stressful situations (Lazarus & Folkman, 1984; Jacobs, Dehue,

Völlink, & Lechner, 2014). From this definition, Konishi (2003) described coping strategies as "anything that a person thinks and/or does in an attempt to deal with a stressor" (p.11). Bullying researchers have long been interested in understanding how victims cope with being bullied. For example, in the seminal model by Lazarus and Folkman (1984), it has been demonstrated that individuals tend to conduct a primary and secondary appraisal when they encounter a stressful situation, such as bullying. The primary appraisal assesses the threat and degree of severity of the situation; the secondary appraisal takes stock of a person's coping resources. As an example, in the context of cyberbullying, the primary appraisal may involve assessing the electronic text or photo to determine if it is embarrassing, intimidating, or annoying, and the secondary appraisal might assess the quality of one's social network, as well as one's personal competencies. According to Lazarus and Folkman, individuals' decisions at every stage are determined by the initial primary and secondary evaluations and predict whether the individual will employ a *problem-focused* or an *emotional-focused* coping strategy. Problem-focused coping involves the victim's ability to tackle the problem in person or seek support from adults or peers; whereas emotional-focused coping may involve internalization and externalization behaviours such as withdrawing, ignoring, crying, and rationalization.

Roth and Cohen (1986) provide another framework for understanding how victims cope with a bullying situation. According to these researchers, there are two major categories of coping: *approach* or *avoidance*. Approach coping strategies consist of actions that confront the stressful situation directly, such as a victim of cyberbullying confronting the perpetrator directly and having a dialogue on the issue. Avoidance coping strategies involve the victim evading the stressful situation, ignoring the bully or pretending not to be bothered by the bully's actions. Roth and Cohen (1986) emphasized that approach coping strategies are mainly used by

individuals who believe that they have adequate resources to handle stressful situations; whereas avoidance coping strategies are usually applied in uncontrollable situations and when there are inadequate resources for the victim to handle the situation.

For the purposes of this study, the two coping models are deemed compatible and overlapping to a large extent. For example, approach and avoidance could be another dimension of problem and emotion-focused strategies. In particular, avoidance strategies are inherently emotion-focused or passive, while approach strategies are problem-focused or active coping efforts. The overlap of these two models has been supported by research conducted by Ayers, Sandler, West, and Roosa (1996), who integrated the two models in assessing coping and psychometric properties of the measures with children and adolescents in grades 4 through 6 in the U.S. Using confirmatory factor analysis, Ayers and colleagues explored the adequacy of the dimensions of coping strategies in children and adolescents. Results of their factor analysis identified four dimensions of coping strategies, namely active coping, avoidance coping, distraction coping, and support seeking coping. Given that the integration of the two dimensional coping models appears to describe coping strategies in children and adolescents (Ayers et al., 1996), the present study integrated both models using the Ayers et al. system for exploring coping strategies used by the victims of online bullying.

The two coping models have been extensively used in understanding how individuals cope with various life stressors, including bullying. For example, in a study of children and adolescents between the ages of 9 and 15, Hunter and Boyle (2004) found that ambiguity in appraising a stressful event resulted in greater use of wishful thinking, seeking social support, and problem-focused coping in victims of school bullying. It was also found that students who perceived having no control to change the bullying event were more likely to use wishful

thinking coping than those who reported having high sense of control over the bullying incident. Findings from an observational study exploring how children between the ages of 8 and 13 coped with traditional bullying episodes (Wilton et al., 2000) found that victims were more likely to employ different strategies, including ignoring bullies, verbal and physical aggression, acquiescence, instrumental and avoidance, respectively. In a study of secondary school adolescents between the ages of 13 and 16, Sharp (1995) reported that victims of traditional bullying were more likely to respond to bullying in various ways including ignoring the bully, walking away, defending themselves assertively, and fighting back aggressively. Another study with Canadian children and youths aged 4 to 19 years on what works in response to bullying (Craig, Pepler, & Blais, 2007) found that, while some of the victims tend to do nothing in response to bullying, others reported employing from one to over four different strategies to deal with bullying experiences. A qualitative study with elementary and middle school students in the US revealed that victims of traditional bullying preferred using problem-focused coping (e.g., reporting to a teacher, talking with the bully) over emotional coping strategies such as listening to music and crying (Tenenbaum, Varjas, Meyers, & Parris, 2011).

With regard to sex differences, studies have shown that female adolescents are more likely to seek social support, to distance themselves, or to ignore the situation (Craig et al., 2007; Hunter & Boyle, 2004; Skrzypiec, Slee, Murray-Harvey, & Pereira, 2011), and internalizing or emotional-focused strategies (Olafsen & Viemero, 2000) in dealing with school bullying, whereas boys are more likely to prefer physical aggression, retaliation or revenge, self-defence, and externalizing strategies (Craig et al., 2007; Sharp, 1995; Tenenbaum et al., 2011). Other studies (Kanetsuna, Smith, & Morita, 2006; Olafsen & Viemero, 2000) reported no sex differences. In particular, in a study with Finnish children ages 10-to 12-years in response to

traditional bullying, Olafsen and Viemero (2000) found no sex differences in the use of aggressive, distraction, or endurance coping strategies.

Comparing British and Japanese secondary school students' opinions on coping with traditional bullying, Kanetsuna and colleagues (2006) found seeking support followed by taking direct action to be the most common coping strategy used among students in the two cultural contexts, with more British students likely to seek help than Japanese students who are more likely to take direct actions. Other subsequent studies with secondary school students in the UK (Paul, Smith, & Blumber, 2012; Smith et al., 2008) and in Germany (Riebel et al., 2009) have shown that victims were more likely to seek social support, stand up for themselves, and/or use avoidance coping in response to traditional bullying and cyberbullying.

As noted above, although there is evidence identifying cyberbullying as a unique form of bullying (Law et al., 2012b; Bonanno & Hymel, 2013), research on cyberbullying has mainly been conducted in high income countries (Strohmeier et al., 2013) and is largely rooted in findings regarding traditional bullying (Tokunaga, 2010). This is a helpful starting point given that there are similarities between the two behaviours that are not yet thoroughly understood within a Tanzanian context. Knowledge about coping with traditional school bullying can illuminate our understanding of coping strategies in victims of cyberbullying and the factors influencing the selection of their particular coping behaviours, which was explored in the current study.

2.6.1 Coping and Cyberbullying

Although contemporary research in the area of cyberbullying has focused primarily on exploring the prevalence, consequences, and determinants of perpetration and victimization (Hinduja & Patchin, 2007; Jacobs et al., 2014), there has been some effort to identify specific

coping strategies used by victims of cyberbullying and the factors influencing the selection of particular coping strategies. Compared to traditional bullying, more work is needed to uncover the determinants of coping strategies with cyberbullying. In an effort to address this gap, roughly 90 experts in the field of cyberbullying (Jacobs et al., 2014) identified potential variables essential to predicting how adolescents would cope with cyberbullying. Based on these experts' ratings, opinions/views, and beliefs, about 115 variables/constructs were identified as relevant to predicting coping with cyberbullying. These included conflict resolution skills, attitude, social skill, social relationships, resilience training, assertiveness, rumors and self-disclosure, impulsivity, social support, and communication style. Even though this study was important in uncovering the potential determinants of coping with cyberbullying, it was only based on experts' ratings, views, and beliefs rather than the empirical evidence that helps to delineate how identified factors interact in influencing choices of specific coping strategies among victims. To develop effective interventions, we require these variables to be empirically tested. The current study was designed to do so by exploring the role of psychosocial variables (i.e., self-esteem, and assertiveness) and contextual factors (i.e., child-, parents, -peers, -teacher\s relationships) on the selection of coping strategies in response to cyberbullying among Tanzanian adolescents.

There has been some effort to identify specific coping strategies used by victims of cyberbullying. For example, in a review by Tokunaga (2010) children and adolescents were reported to use various strategies in response to cyberbullying including taking technological precautions (e.g., blocking cyberbullies), confronting the perpetrator/s, ignoring the bullying, or doing nothing. Moreover, they were reluctant to share cyberbullying experiences with their parents due to the fear of not getting help or being deprived of using technology.

Other research with secondary school students aged 11-16 years in England (Smith et al., 2008) identified avoidance (blocking messages, changing one's e-mail address/phone number and identity information), telling someone, ignoring the bullying, reporting the incident to police and/or other authorities, contacting one's service provider, confronting perpetrators by asking them to stop, and retaliating as the common strategies reported by youth for coping with cyberbullying. In the same study, a substantial group of victims (44%) were reluctant to tell anyone about the incident. However, for those who were confident enough to share their experience, a large majority reported talking to friends/peers, followed by parents/guardians, whereas teachers and other adults were rarely consulted. In a study of eighth graders in North America on responses to cyberbullying, Holfeld and Grabe (2012) found that victims responded most commonly by blocking the cyberbully, followed by getting revenge, doing nothing, leaving the site, turning off computer/cell phone, and/or changing identity information. Other work with primary and secondary school students in the Netherlands identified ignoring, talking to others, deleting hurtful messages, and retaliating against the alleged bullying as strategies for dealing with cyberbullying (Dehue et al., 2008).

Using hypothetical cyberbullying scenarios in a study of high school students aged 15 to 19 in the US, Parris et al. (2012) identified avoiding the situation, talking in person with the perpetrator, doing nothing, justifying the incident, accepting the situation, and increasing security as the most common coping strategies for dealing with cyberbullying. Other students reported that little or nothing could be done to stop cyberbullying and still others recommended banning mobile phones and Internet use in schools as ways to deal with cyberbullying (Parris et al., 2012; Smith et al., 2008). Allison, Schenk, and Fremouw (2012) found that college-aged students in the U.S. reported telling someone, avoiding friends and peers, consuming alcohol, retaliating, and

abstaining from attending social events as the most common coping strategies employed by victims of cyberbullying.

Overall, coping with both traditional and cyberbullying appears to be a complex process which appears to vary by age, sex, culture, and other contextual variables. The reported coping strategies for traditional bullying that revolve on the reviewed coping models are to a large extent consistent with the reported coping strategies for cyberbullying. However, cyberbullying occurs in a unique context (characterised by perceived anonymity, large audience, and permanence of the posted information) suggesting that some coping strategies may only be relevant for victims of cyberbullying, and vice versa. For example, technology-related precautions are more practical for cybervictims than for traditional bullying victims.

There have been some efforts to identify which coping strategies are found to be effective for adolescent victims of cyberbullying. In a recent focus group interview study on coping with cyberbullying among Dutch adolescents, aged 12 to 15, Jacobs et al. (2015) found that retaliating, ignoring, doing nothing, actively coping (blocking the perpetrator, deleting the message, standing up for one's self) were reported in the focus group discussions as the best coping strategies for cybervictims. In another recent study of Czech adolescents, aged 12 to 18, examining effective coping strategies with cyberbullying, Machackova, Cerna, Sevcikova, Dedkova, and Daneback, (2013) found that using technical solutions (e.g., blocking contacts on social network sites, deleting perpetrators, changing phone number), seeking support, and avoiding the site were reported by the cybervictims as the most effective ways to stop cyberbullying, while confronting the perpetrator, retaliating, and seeking for advice online were considered to be the least beneficial strategies to stop cyberbullying. In the same study, avoiding cyber perpetrators, seeking support, and retaliating (for some) were reported to be emotionally

helpful for cybervictims. In a longitudinal study with hypothetical adolescent cybervictims (mean age = 13.18 at Time 1) in Switzerland, Machmutow, Perren, Sticca, and Alsaker (2012) found that cybervictimization predicted increase in depressive symptoms. In the same study, when coping strategies were included as moderators six months later (Time 2), the higher use of social support coping was associated with lower reported levels of depressive symptoms, while the use of active coping was linked with high reported levels of depression at time two. In a recent study with primary school students in the Netherlands, Völlink, Bolman, Dehue, and Jacobs (2013) found that the use of emotional-focused and avoidance coping strategies were linked with depressive feelings and health complaints for cybervictims.

With the exception of a few studies (Jacobs et al., 2015; Machackova et al., 2013) that asked cybervictims about the efficacy of various coping strategies, most studies have evaluated coping across the entire sample of students (victims and non-victims) (Machmutow et al., 2012; Parris et al., 2012). Given that victims may have different experiences with cyberbullying than non-victims, studies that evaluate the effectiveness of coping strategies from the victim's perceptive are still needed, especially in a Tanzanian context where there is a dearth of empirical work on cyberbullying.

Against this backdrop, it appears that there is much variation in coping strategies among cyberbullying victims. While some victims seem to cope directly with cyberbullying, others appear more vulnerable to further bullying and the associated negative consequences such as depression and suicidal ideation (Hindunja & Patchin, 2010). As noted earlier, a large body of literature on this topic originates in western countries and very little is known about African countries, especially in Tanzania where no research on cyberbullying has been conducted to date. The results of the reviewed studies suggest that efforts to enhance effective strategies for coping

with cyberbullying behaviour does not only require an understanding of factors influencing coping and the different coping strategies used by adolescents, but may also benefit from an understanding of which strategies they consider to be most effective in coping with cyberbullying and *why*, a gap that this study addressed from a Tanzanian context.

2.7 Cyberbullying in a Tanzanian Context

Although the use of mobile phones and the Internet is widespread across the globe, studies of cyberbullying among children and youth have mainly come from North America, Australia, Europe, and Asia. Indeed, a recent collection of cross-cultural research to advance knowledge about cyberbullying came from eleven countries, each of which were located in these four regions (Cross, Li, Smith, & Monks, 2012). Unfortunately, a review of the status of cyberbullying in the global playground by Li, Cross, and Smith (2012) considered no data from a country on the continent of Africa, despite the increase in the use of mobile phones and ICT in African nations (Mushi & Maharaj, 2013). Recently, a small number of studies by a group of individuals from Nigeria (Okoiye, Anayochi, & Onah, 2015; Olumide, Adams, & Amodu, 2016; Olumide, Adams, & Amodu, 2015) and from South Africa (Rachoene & Oyedemi, 2015; Smit, 2015) provided evidence that cyberbullying is an emerging issue of concern among African adolescents, but very little is known about the problem in African countries including Tanzania. Including data about cyberbullying from African countries like Tanzania is essential for informing intervention programs, but also important for advancing cross-cultural knowledge about cyberbullying-related issues. This is especially true given that technology use may be quite different in Tanzania, a country just entering the digital age.

Just like other developing countries, Tanzania has demonstrated a remarkable advancement in the use of Information and Communication Technology (ICTs) over the past

decade (Hancock, 2005; Mushi & Maharaj, 2013). For example, of Tanzanians surveyed, about 97% reported having access to mobile phones (Hancock, 2005). Currently, over 28 million Tanzanians have access to mobile phones and the Internet penetration rate is approximately 61% (Mungy, 2014). In addition, in recognition of the potential use of mobile phones and the Internet for education (Kafyulilo, 2012; Li, 2006; Mushi & Maharaj, 2013; Pima, 2014), there are efforts to start using this technology for enhancing teaching and learning in Tanzanian schools. For example, the BridgeIT project, known as "Elimu kwa Teknolojia" in Swahili, which means "Education through Technology," has currently been implemented in 150 Tanzanian primary schools (Kasumuni, 2011).

Like their counterparts in other parts of the world, Tanzanian adolescents are also the largest users of the modern communication technologies, including mobile phones and the Internet, with about 60% of secondary school students reporting that they own a mobile phone (Kafyulilo, 2012). As noted earlier, the level of accessibility is likely higher due to adolescents sharing mobile phones (with separate SIM-cards; BBC, 2005) and the cheap price of mobile phones and low Internet cost (Mungy, 2014). As in other countries, along with the increase in ICT use in Tanzania (Hancock, 2005; BBC, 2005; Kafyulilo, 2012; Mushi & Maharaj, 2013; Mungy, 2014), comes the negative outcomes associated with such use, including cyberbullying. For example, a recent homicide of a Tanzanian female youth from Dar es Salaam and the suicide death of a male youth from Arusha has been associated with cyberbullying (Mwananchi, 2014). Empirically, there is very little known about the prevalence of cyberbullying among Tanzanian adolescents, the psychosocial determinants of coping strategies with cyberbullying and how the potential determinants interact to influence the choice of specific coping strategies among

victims. We also know very little about the effectiveness of these various coping efforts. The current study was one of the first to address this gap.

2.8 The Current Study

The goal of this research was to use socio-ecological theory (Bronfenbrenner, 1979, 2005) to explore Tanzanian adolescents' experiences of cyberbullying, how they coped with cyberbullying, as well as how several internal, individual factors and external, social factors influence their choice of coping strategies. According to socio-ecological theory, the behaviour of an individual is a function of the interaction between personal characteristics and external environmental factors. Based on previous empirical work, the present study explored adolescents' experiences of cyberbullying and victimization, and how internal individual factors, specifically, general social assertiveness and self-esteem, and external social factors, specifically, the relationships with parents, peers, and teachers, are related to how adolescents cope with cyberbullying, considering five different coping strategies – active, distraction, avoidance, support-seeking, and retaliation.

2.9 Research Questions

This study was guided by the following four research questions:

1. What is the prevalence rate of cyberbullying and cybervictimization experiences among adolescents in Tanzania, and the associated qualitative negative effects on victims?
2. How are cyberbullying and cybervictimization experiences among adolescents in Tanzania related to socio-demographic factors (grade, sex, number of siblings, and parent education level) and access to technology (number phones at home, time online, location online, and sharing phones/handsets)?

3. What coping strategies do Tanzanian victims of cyberbullying report using, and which strategies do victims versus non-victims perceive to be effective (and why)?
4. How are individual personal characteristics (general social assertiveness and self-esteem) and external social factors (relationships with parents, peers, and teachers) related to coping strategies with cyberbullying for Tanzanian adolescents? Further, are these relationships moderated by grade and sex?

Similar to previous research (Kowalski et al., 2014; Tokunaga, 2010), and given the increasing uptake of digital devices in Tanzania (Kafyulilo, 2012; Mushi & Maharaj, 2013; Mungy, 2014), it was anticipated that the prevalence of cyberbullying and cybervictimization among Tanzanian male and female adolescents would vary across grade levels, with older students reporting more cyberbullying and cybervictimization than younger students, However, it is an open question as to whether the prevalence rate would vary for boys and girls and across grade levels in a Tanzanian context.

Based on previous findings on cyberbullying (Holfeld & Grabe, 2012; Law, Shapka, & Olson, 2010; Tsitsika et al., 2015), it was postulated that technology-related variables would be positively associated with cyberbullying and cybervictimization among Tanzanian adolescents. Further, it was also anticipated that both individual-level factors and external social factors would be positively related to active and social support-seeking coping strategies, but negatively related to avoidance, distraction and retaliation coping strategies. However, it was unknown whether the strength of these relationships, as well as potential grade and sex moderation effects would be unique in a Tanzanian context.

To answer the four research questions and to confirm these hypotheses, this study used a concurrent mixed-method research design by nesting qualitative methods within a dominantly quantitative study (Creswell, 2009). Researchers have provided evidence suggesting the strength of mixed-method research in providing a deeper and holistic understanding of research objectives (Best & Khan, 2006; Creswell, 2009; Law, 2009; Mathison, 1988). This study used self-report survey data (quantitative) to provide statistical information on the cyberbullying and cybervictimization and the trend of coping strategies among secondary school adolescents. Semi-structured, follow-up interviews (qualitative) with a select subsample of participants were then conducted to provide further information for enriching the quantitative data. Given the dominance of quantitative data, which makes this nested mixed-method study fall largely within a positivist paradigm (Creswell, 2009), the qualitative components, including analysis, also reside within the positivist approach. The quantitative and qualitative data were not only concurrently collected, but are simultaneously presented in order to provide a clearer understanding of the research questions.

Chapter 3: Method

3.1 Participants

A self-report questionnaire (Appendix A) was administered to a total of 918 secondary school adolescents from five randomly selected secondary schools (20 classes), three schools (12 classes) in the Dar es Salaam region and two schools (8 classes) in the Mwanza region. The two regions are the major commercial centers and the largest cities in Tanzania. We know that rapid advancements in information and communication technologies, globalization policies, and modernity has affected the dominant collectivism culture in many countries including Tanzania. As collectivism culture breaks down, there is more room for cyberbullying especially in cities due the high uptake of mobile phones and Internet technology. In this regard, adolescents in the two cities were likely to have high access and exposure to mobile phones and Internet (Mungy, 2014), making the two cities appropriate study context.

The questionnaire was translated into the national language, Kiswahili, and back translated into English to verify accuracy by experts from Dar es Salaam University College of Education. The translated questionnaire was initially piloted by eight students (as a check) who were not included in the final sample. Of the 918 students who completed the survey, 21 identified their sex as "other", and 119 were above the age ranges of 14 and 18. Because age and sex were central to the focus of the study, these individuals were excluded from subsequent analyses. Age 14-18 was the target age-range because adolescents have consistently been reported using digital devices and engaging in cyberbullying behaviours at a more disproportionate rate compared to other age groups, making it an appropriate study population (Hinduja & Patchin, 2013; Patchin & Hinduja, 2012; Shapka & Law, 2013).

The final sample used in the analyses included 778 secondary school adolescents (400 male; 376 female students) aged 14 to 18 (M = 15.79, SD = 1.27). With regard to grade levels, form I (grade 8) comprised 17%, form II (grade 9) comprised 29%, form III (grade 10) comprised 26%, and form IV (grade 11) comprised 28% of the total sample. Although the sample is slightly unbalanced across sex and grade, the overall sample size is large enough for regression-based analytic techniques, which are robust to unbalanced designs (Howell, 1997).

In addition to the questionnaire data, a subset of participants (n = 20, 50% female students) who identified themselves as victims of cyberbullying were invited to take part in follow-up, semi-structured interview. The average age of these participants was 16 years (M = 16.05, SD = 1.15).

Table 1. *Grade, Sex, and Age Distribution for Qualitative Participants*

		Sex of Student		Age of Student
Grade	*n*	Males	Females	
Grade 8 (Form I)	5	3	2	14-15
Grade 9 (Form II)	5	2	3	15-16
Grade 10 (Form III)	5	3	2	16-17
Grade 11 (Form IV)	5	2	3	17-18
Total	20	10	10	

3.2 Procedures

After obtaining approval from the University of British Columbia ethics board, the University of Dar es Salaam (local institution controlling access to the actual research field), the Dar es Salaam and Mwanza Regional Commissioner's office, and from the respective schools, the author and trained research assistants visited the five randomly selected schools to introduce the study and to explain its nature and purpose. At this point, students were invited to be

involved in the study. In a Tanzanian context, although some parents may provide active consent for a child to participate in a study, the majority of parents tend to delegate this responsibility to teachers due to various reasons including having trust on teachers, low level of literacy, and negative attitude in signing documents due to historical (colonial) reasons. Specifically, 1,000 letters explaining the nature and purpose of the study were sent to parents/guardians and those parents/guardians who did not want their children to participate in the study were requested to indicate so on the consent form and return it to the classroom teacher. Only 5.2% (n = 52) of potential participants were not given consent to participate.

The author and other research assistants (faculty members recruited from Dar es Salaam University's College of Education) administered a paper-and-pencil questionnaire during regular class time (40 to 80 minutes) in February and March of 2015. Before the distribution of the surveys, the author and research assistants explained the purpose of the study, the procedures involved in responding to the questionnaire items, and informed students that their participation was voluntary and that all responses would remain anonymous and confidential. At this point, a further 30 students (3%) chose not to participate in the study. Those students who were not participating remained in class and were assigned alternative tasks by the class teacher.

The last page of the questionnaire included an invitation to participate in a semi-structured interview for participants who identified themselves as victims of cyberbullying. Interested students were asked to provide their contact information. A total of 367 (nearly 40%) participants who responded to the questionnaire expressed interest (by completing the interview invitation sheet) in sharing their experiences of cybervictimization. A total of 20 participants (10 male students and 10 female students) from the pool of students who completed the questionnaire, and who identified themselves as victims of cyberbullying and were interested in

sharing their experiences were randomly selected (within each sex and grade) and contacted and invited for face-to-face interview with a researcher.

The interviews with participants from each school occurred within two weeks of the questionnaire data being collected. Despite giving participants an option to be interviewed in English or Kiswahili (national language) and by a male or female interviewer, all interviewees were comfortable to be interviewed by the researcher and only one opted to be interviewed in English. At the beginning of the interview, participants were reminded about the goal of the interview, the procedure, and permission was obtained from the interviewee to use a voice recorder and to jot down some key information during the interview process. Participants were also informed about the confidentiality of the information they shared. After establishing rapport and trust (Fontana & Frey, 1994), the interviewer begun an exploration of the phenomenon (i.e., cyberbullying experiences and coping strategies) using clear general questions based on the semi-structured interview protocol (see Appendix B). This was complemented by asking more focused, follow-up or probing questions that reflected constructs in the questionnaire, to achieve a deeper and richer understanding of their experiences. In general, interviews ranged between 30 minutes and one hour.

To show appreciation for their time and as a thank you for their willingness to participate in the study, all participants in each school were included in a draw to win a mobile phone. Information about the draw was communicated soon after collecting the surveys from the students. Classroom teachers were also given an appreciation card for their coordination work after for their support and help in administering the questionnaires.

3.3 Measures

Demographic variables. Several demographic variables of interest, including the school, age, sex, and grade level, were included in the questionnaire (See Appendix A). Other demographic information included some questions about their parents/guardians (e.g., who they live with, how many siblings, and their parents/guardians' level of education) and teachers (e.g., whether they were male or female).

Technology-related variables. Previous research has documented the relationship between access to technology and cyberbullying behaviours (Law, Shapka, & Olson, 2010; Tsitsika et al., 2015). As such, the questionnaire included items to assess social aspects of online behaviour including the average time spent online, whether participants accessed technology in a private location, whether participants shared cell phones or handsets, and the number of cellphones at home. Of interest was the overall average number of hours the adolescent spends online per week (M = 10; SD = 12), which was computed from the two items that asked participants to estimate the average time spent online on a typical weekday and on a typical weekend. Other variables on the use or access to the digital devices among Tanzanian adolescents are summarized in the Table 2.

Table 2. *Tanzanian Adolescents and Access to Cell Phones and Internet*

		Age of Student					Sex of Student	
Access/Use	Overall	14	15	16	17	18		
Own a cell phone	47%	22%	37%	52%	65%	75%	Males	56%
							Females	39%
Own a cell phone line (Sim-card)	58%	26%	51%	61%	77%	85%	Males	68%
							Females	48%
Sometimes share cell phone/handset	45%	33%	42%	47%	51%	56%	Males	52%
							Females	40%

Access/Use	Overall	Age of Student					Sex of Student	
		14	15	16	17	18		
Use cell phone at home	76%	61%	75%	77%	85%	90%	Males	85%
							Females	69%
Connect/use internet devices	86%	76%	87%	88%	89%	92%	Males	90%
							Females	83%
Connected to social network sites	45%	33%	36%	48%	56%	57%	Males	52%
							Females	38%
Parents are aware that you own a cell phone	62%	29%	54%	68%	79%	86%	Males	72%
							Females	52%

Cyberbullying and Cybervictimization. The Cyber-Aggression and Victimization Scale (CAV; Shapka, 2014) was used to measure cyberbullying and cybervictimization. The CAV is a 24 items scale (12 items each for cyberbullying and cybervictimization) that uses a 5-point Likert response scale (*Has never happened; Has happened rarely; Happens every month; Happens every week; Happens several times a week*). Given that this was the first empirical study on this topic within a Tanzanian context, participants were asked to report on the items based on their *lifetime experience*. Some items were adapted for use in a Tanzanian context where English is not the first language but is used as a language of instruction in secondary and tertiary education. For example, statements such as "Sent or forwarded a hurtful message electronically to someone", and "Had gossip or rumors spread about you online" were altered to read "Sent or forwarded a hurtful message through mobile phone or Internet to someone", and "Had gossip or rumors spread about you through Internet or mobile phone."

As presented in the preliminary results in Chapter 4, a principal component factor analyses (PCA) showed that the two scales demonstrated good internal consistency scores of .94 and .88, respectively. The total scores for cyberbullying and cybervictimization indicated skewed

distributions, atypical phenomenon with bullying measures. A square root transformation was done to address this concern (Tabachnic & Fidell, 2013) but there was no significant change. Therefore, composite variables for cyberbullying and cybervictimization measures were obtained by computing the mean of all items that make up each measure. Higher scores indicated higher levels of cyberbullying and cybervictimization.

For some analyses, participants who reported having been victimized at least once or more in their lifetime (victims, n = 439) were compared with those who reported to having never been victimized (non-victim, n = 323) using Multivariate Analysis of Variance.

General social assertiveness. A total of 11 items on general and social assertiveness from Wills, Baker, and Botvin's (1989) adaptation of Gambrill and Richey's (1975) assertion inventory were used to measure general social assertiveness. The measure has been successfully used with both middle and junior high school students (Wills et al., 1989). 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). For clarity and consistency in the response format, participants were asked to express their opinions for each of the 11 items on a 4-point, Likert scale (*Never do this; Sometimes do this; Often do this; and Always do this)* instead of the original 5-points *(Never do this; Rarely do this; Do this half of the time; Usually do this, and Always do this)*. The response "Do this half of the time" was omitted and "Usually do this" in the original scale was replaced by "Often do this" to enhance clarity because the two terms "usually" and "always" are closely related and are sometimes used interchangeably in a Tanzanian context. Based on PCA findings presented in chapter 4, the composite variable for this sub-scale was computed by taking the mean of eight items. Higher scores indicated higher levels of general social assertiveness. In terms of reliability, the scale demonstrated high internal consistency of

.81, which is similar to the test-retest reliability coefficients of .89 and .90 for two samples in the original measure (Gambrill & Richey, 1975).

Self-esteem. Rosenberg's (1965) self-esteem scale (RSE) was used to measure adolescents' self-esteem. Participants were asked to rate themselves on each of the 10 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, or Strongly agree*). Negatively-worded items (i.e., item 2, 5, 6, 8, & 9) were reverse-scored. Based on the results of a principal components analyses, described in detail in Chapter 4, the composite score for this measure was computed by taking the mean of nine items that appeared relevant for this particular cultural context. Higher scores indicated higher level of self-esteem. Although this is a classic self-esteem scale that has been extensively used across age groups (Ciarrochi & Bilich, 2006; Patchin & Hinduja, 2010), the Cronbanch alpha for this measure was relatively lower (α =.67) with this particular target group.

Parent, Peer, and Teacher Relationships. A total of 21 items (seven items for each of three constructs) adapted by Konishi (2003, 2005) from Thomson's (1989) Relational Provision and Loneliness Questionnaire (RPLQ) were used to assess adolescents' perceived relationships with their parents, peers, and teachers. Of the two dimensions of the RPLQ tapping "intimacy" (having people to go to with problem) and "integration" (having a group you can be with or do things with; Konishi, 2005; Thomson, 1989), the present study only used the "integration" dimension because of the perceived importance of belongingness/connectedness in a social setting. For example, in a Tanzanian context, where the number of teachers a child interacts with is determined by the number of subjects in a particular grade level, it was considered logical to focus on how a child feels connected (i.e., integration dimension) with several teachers and not

just one teacher in the school (i.e., intimacy dimension). Also, to ensure the focus was on parents, the term family was replaced with parent(s). Identical items were used across each relationship group (peers, family, 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 teacher(s)"). For clarity and consistency in the response format, 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)* instead of the original 5-point *(Not at all true, Hardly ever true, Sometimes true, True most of the time, and Always true).* Based on results of a principal components factor analyses, presented in greater detail in Chapter 4, 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 good internal consistency (Cronbanch's alpha) ranging from .87 to .89, consistent with findings from previous work with this measure (Konishi, 2003, 2005; Thomson, 1989).

Coping strategies. A total of 50 items were used to assess coping strategies. Of the 50 items, 45 items were adapted from Ayers et al. (1996) Children's Coping Strategies Checklist (CCSC) to assess the four dimensions of coping strategies in adolescents: 1) active coping (e.g., "thinking about what I could do before I do something"; "do something to make things better"), 2) avoidance coping (e.g., “try to stay away from the problem”; "try to put it out of my mind"), 3) distraction coping (e.g., "go walking"; "play sports"), and 4) support-seeking coping (e.g., "talk about how I am feeling with my mother or father"; "talk to my brother or sister about how to make things happen"). Given that retaliation has been documented as a very important and

unique response in research on bullying (Allison et al., 2012; Dehue et al., 2008; Law et al., 2012a, 2012b), 5 items adapted from Frey and colleagues (personal communication through e-mail, January 9, 2015) were added to the measure to capture retaliation as a coping mechanism (e.g., pay back by threatening or insulting the person). Given that skateboards and roller skates are not common in Tanzania, the item, "go skateboard riding or roller skating," in the CCSC measure was replaced with "go to the beach or disco club", which are relevant to the context. Also, to enhance clarity, examples on cyberbullying were specified in some of the items.

In most of the studies reviewed on coping (e.g., Hunter & Boyle, 2004; Folkman et al., 1986), participants were provided with a general opening statement or instruction indicating being involved in a specific stressful situation or asked to imagine being in a stressful situation and then are asked to respond to the items on the coping measure. In the present study, as an opening statement to guide participants' responses to the measure, participants were asked: In response to the harassment, abuse, intimidation and embarrassment through mobile phones and Internet "*What would you do or what did you do?"* and *"How effective would it be?" or "How effective was it?".* Participants responded to each of the items twice on a 4-point, Likert scale, regarding what they did or thought they would do *(Never do this; Sometimes do this; Often do this; Always do this)* and for how effective it was or thought would it be *(Never effective; Sometimes effective; Often effective; Always effective)*. The measure has been successfully used in studying children and adolescents coping in a wide range of stressful situations including traditional bullying (e.g., Ayers et al., 1996; Konishi, 2003) and coping under pressure (Ayers, & Sandler, 1999).

In terms of reliability, the four coping factors – active, avoidance, distraction, and support seeking have demonstrated good internal reliability, with alphas of .88, 77, .72, and .75,

respectively (Ayers et al., 1996). Reliability analysis in a study by Konishi (2003) also reported adequate internal consistency for each of the subscales of CCSC (alpha = .87 for active, .76 for avoidance, .74 for distraction, & .70 for support seeking). Based on the results of a principal components factor analyses, presented in greater detail in Chapter 4, composite variables were created for each of the five major coping factors that emerged by computing the mean scores based on relevant items. Higher mean scores indicated greater use of that particular coping strategy and perceptions of greater effectiveness. With the exception of avoidance coping which demonstrated low internal consistency of .59, the other four coping strategies had good internal consistency, ranging from .79 to .89.

3.4 Qualitative Data

Qualitative data were intended to enrich the quantitative findings for research question one and three. For the semi-structured interview, questions about cyberbullying experiences were adapted from Law (2009), and items about coping were developed by the author in consultation with his supervisory committee. The interview consisted of a total of six questions, four on cyberbullying experiences, one on coping strategies, and one on the effects of cyberbullying. These primary questions were complemented by asking more specific, follow-up or probing questions to encourage the interviewee to provide a more detailed response about the phenomenon (e.g., Would you explain more about why cyberbullying happens? Who was/were the perpetrator(s) and what media did they use to bully you? What coping strategies do you find to be most effective and why?) For the interview protocol, please see Appendix B.

Analyses of Qualitative Data. The audio-recorded interviews in *Kiswahili* language were transcribed into Microsoft Word by a graduate research assistant (native Kiswahili speaker) and then translated by the original interviewer into the English language. The transcriber and the

interviewer met regularly to review and compare the translation of the transcripts for consistency. After the transcription and translation process, all interview data were imported into NVivo, a qualitative data analysis software that helps in organizing and sorting of data according to the codes or themes (Flick, 2009).

Prior to the development of the coding scheme, a research assistant and the author had time to read and familiarize themselves with the interview transcripts. Given that interviews were embedded within a dominant positivist research design, thematic analysis using deductive-inductive coding process was used (Nastasi, 1999; Varjas, Nastasi, Moore, & Jayasena, 2005). More specifically, major codes or themes were generated based on the existing literature on the topic (deductive coding), as well as from the interviews data (inductive coding; Varjas et al., 2005). In particular, participants' responses on which coping strategy was considered to be effective were coded according to the five identified coping strategies (i.e., active, avoidance, social support seeking, distraction, and retaliation). This information was used to shed more light on findings from the questionnaire. In addition, and consistent with Nastasi (1999) and Varjas and colleagues' (2005) coding process, five major data-driven themes on the negative effects of cyberbullying on victims, and five themes on why particular coping strategies were considered effective, were inductively extracted from the interview data. This method provided richer information for a deeper understanding of the negative impacts of cybervictimization on adolescents and rationale for using a particular coping strategy.

For familiarity and training purpose, the two coders coded 10% of the interview transcripts together. At this point, the two coders discussed and adjusted the codes and definition to enhance clarity and consistency (Campbell, Quincy, Osserman, & Pedersen, 2013). After this initial experience and familiarizing themselves with the data, codes and definitions, and the

coding process prior to the actual coding of all interview transcripts, both research and research assistant independently coded another subset of the interview transcripts (10%) to assess initial inter-rater reliability and to address observers drift or discrepancy. The inter-rater reliability across themes before discussing discrepancies was between 65% to 80%. After negotiating the discrepancies, the initial inter-rater reliability improved to the level of 70% to 95% across themes, which is considered adequate. Research has linked the unresolved discrepancies between or among coders to various reasons including different levels of knowledge about the topic (Campbell et al., 2013).

After familiarizing with the coding scheme and negotiation of the discrepancies in the initial training stage, in the next step, both researcher and research assistant felt confident to use the coding scheme for the actual coding of all the 20 interview transcripts. The two coders coded the interview transcripts independently based on the developed coding scheme using NVivo software. Overall, all the interview transcripts were evaluated and inter-rater reliability was adequate for all codes or themes (Kappa ranging between 69% to 100%).

Chapter 4: Results

Preliminary results are presented first. This section focuses on testing assumptions and conducting principal component analyses for the adapted measures. After that, the results are organized around each of the four research questions. The quantitative and qualitative results are presented concurrently, depending on the research question.

4.1 Preliminary Analyses

4.1.1 Assumption Testing

As described below, apart from minor violations, assumptions for the first two regression models on cyberbullying and cybervictimization were largely met. Tolerance values were larger than .10, variance inflation factor was less than 10 for the two models, and the correlations were less than .8, which indicates that multicollinearity was not a concern. The Durbin-Watson statistic value for the two regression models were 1.83 and 1.97, which was within the acceptable range (Fidell, 2009), suggested that residuals were independent of one another. However, based on visual examination of the Normal Probability Plot and the Residual Scatterplot, the residuals for the two outcome variables were clustered around 0, but the mean values or points did not perfectly lie along the diagonal line, indicating minor violations to normality. The total scores for cyberbullying and cybervictimization indicated skewed distributions, and a square root transformation was done to address the concern (Tabachnick & Fidell, 2013) but there was no significant change. Given the large sample size and the robustness of regression techniques to non-normal data (Howel, 1997), it was considered reasonable to proceed with the analyses of the data based on the original form.

Assumptions for the regression models for the coping strategies were also largely met. The tolerance value was larger than .10, variance inflation factor (VIF) was less than 10, and the

correlations were less than .8, which as noted, indicating that multicollinearity was not a major concern. The Durbin-Watson statistic values ranged from 1.74 to 1.99 for the series of regression models conducted on coping strategies, which were within the acceptable range (Fidell, 2009), and suggests that residuals were independent of one another. From an examination of the Normal Probability Plot and the Residual Scatterplot, the residuals for the outcome variables were clustered around 0, and to a large extent the mean values or points lay perfectly along the diagonal line, except for retaliation coping. Again, a square root transformation was attempted for the retaliation variable but resulted in no significant change. As before, due to the robustness of regression analyses and the larger sample size, it was considered safe to continue with the subsequent analyses using the original distribution of scores for the active, social support-seeking, avoidance, distraction, and retaliation coping strategies.

4.1.2 Principal Component Analyses (PCA)

Given that quantitative data for this study were collected using measures adapted from a western context, it was considered important to conduct Principal Components Analysis (PCA) to ensure that items loaded on similar factors (Tabachnick & Fidell, 2013) in a Tanzanian context, where little is known about the applicability of the adapted measures. The principal component analysis extraction technique was chosen because the adapted measures have been successfully applied in other contexts, and thus the main interest was to determine the pattern of items loading onto one or more meaningful components, and not in developing or confirming a theory (Field, 2009; Tabachnick & Fidell, 2013). Based on the same authors, Oblique-direct oblimin, which is a non-orthogonal rotation technique, was chosen because most of the psychological constructs and non-experimental studies involving human beings are likely to be interrelated. In addition, components were extracted or determined based on having eigenvalues

larger than 1, inspection of the visual screen plot, and the Monte Carlo parallel analysis (Field, 2009; Pallant, 2010; Tabachnick & Fidell, 2013). The final choice of items and components to report was based on the loading value and assessment of the interpretability and scientific utility of the component (Field, 2009; Tabachnick & Fidell, 2013). With an exception of one item in the general social assertiveness measure (GSAS) which cross-loaded on two components, for other measures, simple structure loading pattern was demonstrated (Tabachnick & Fidell, 2013) with items having loading value $\geq .4$ clustering on only one component.

4.1.2.1 Cyberaggression and Victimization Scale (CAV)

The 24-item CAV scale included 12 items for a cyberbullying subscale, and 12 items for a cybervictimization subscale. Inspection of the correlation matrix revealed the presence of coefficients of .3 or greater, and below .8. The Kaise-Meyer-Olkin (KMO) of .94 and .92, respectively, was above the conventional limit of .50 (Field, 2009; Tabachnick & Fidell, 2013), which verified that the sample was sufficient for the analysis. Bartlett's test of sphericity was statistically significant χ^2 (66) = 6302.80, $p < .001$ and χ^2 (66) = 3900.21, $p < .001$, respectively, indicating that the correlation coefficients between scale items were large enough to perform the PCA.

As expected (Shapka, 2014), results of the PCA identified one unique component for each scale with eigenvalues exceeding 1 and accounting for a total variance of 59.23% for the cyberbullying scale and 46.63% for the cybervictimization scale. The scree plot and Monte Carlo parallel analysis both verified the presence of one component. Therefore, the overall composite variable for each scale used in the subsequent analyses was created by taking the average score of the 12 items on each of the scales. Each of the two scales reported a very strong internal

consistency, with a Cronbach's alpha of .88 for the cybervictimization scale (see Table 3) and .94 for the cyberbullying scale (see Table 4).

Table 3. *Summary of Principal Component Analysis Loadings for Cybervictimization Measure*

Item	Component 1	h^2
Received a sexual message from somebody who was trying to be mean to you	.78	.61
Had hurtful comments made about a photo or video of you	.77	.59
Had something personal posted or re-posted about you online	.73	.53
Had gossip or rumours spread about you	.72	.52
Received hurtful comments about your perceived sexual behaviours	.72	.52
Had sexual content sent to you from somebody who was trying to be mean	.71	.51
Received hurtful comments or messages about your race or ethnicity	.66	.44
Had an embarrassing photo or video of you posted or re-posted online	.65	.42
Received hurtful comments or messages about your perceived sexual orientation	.63	.39
Received a hurtful message from someone	.62	.38
Had something embarrassing or mean posted or re-posted about you	.59	.35
Been purposely excluded online	.58	.34
Eigenvalue	5.60	
% of variance	46.63	
Cronbach's (α)	.88	

Note: h^2 represents communality values.

Table 4. *Summary of Principal Component Analysis Loadings for Cyberbullying Measure*

Item	Component 1	h^2
Used email or text messaging to spread rumours or gossip about someone	.86	.49
Said something sexual to somebody else online to embarrass them	.82	.61
Posted, re-posted, or texted an embarrassing photo or video of someone	.81	.66
Sent sexual content (photos or jokes) to somebody else online to embarrass them	.81	.48
Texted or made hurtful comments about somebody's perceived sexual orientation	.80	.51
Texted or made hurtful comments about somebody's race or ethnicity	.80	.57
Sent or forwarded a hurtful message electronically to someone	.78	.74
Posted or re-posted something private about another person	.75	.64
Texted or made hurtful comments about somebody's perceived sexual behaviours	.72	.65
Posted or sent messages to purposely exclude a certain person or group of people	.71	.52
Posted or re-posted something embarrassing online	.70	.67
Posted or texted a hurtful comment about an online photo or video of somebody else	.69	.65
Eigenvalue	7.18	
% of variance	59.83%	
Cronbach's (α)	.94	

Note. h^2 represents communality values.

4.1.2.2 Relational Provision and Loneliness Questionnaire (RPLQ)

The 21 items of RPLQ measure, including seven items for each of the following three sub-scales: parent-child relationship (PCR), peer relationship (PR), and teacher-child relationship (TCR), were also subjected to a principal component analysis. The absence of correlations below .3 or above .8 supported the factorability of the matrix (Field, 2009). The KMO values of .88 for PCR scale, .90 for PR scale, and .90 for TCR scale exceeded the conventional limit, suggesting

adequacy of the sample for PCA. Bartlett's test of sphericity was also statistically significant for the three scales χ^2 (21) = 2410.74, $p < .001$, χ^2 (21) = 2466.57, $p < .001$, and χ^2 (21) = 2526.15, $p < .001$, respectively. This also indicated that correlations between items on each of the three scales were large enough to perform the analysis.

Based on the PCA, one component with eigenvalues exceeding 1 was extracted on each of the three scales. The PCR component explained 56.90% of the total variance, the PR component explained 58.50% of the total variance, and the TCR relationship component explained 59.48% of the total variance. The scree plots and Monte Carlo parallel analysis for each of the three scales further demonstrated the presence of one unique component for each of the three scales. Based on this, three unique composite variables, one for each scale, were created by computing the mean of the seven items. Consistent with the previous studies that were collected in North America (Konishi, 2003, 2005; Thomson, 1989), the three sub-scales of the RPLQ measure demonstrated a very strong internal consistency, with Cronbach's alpha coefficients of .87 for PCR, .88 for PR, and .89 for TCR (see Table 5, 6, and 7, respectively).

Table 5. *Summary of Principal Component Analysis Loadings for Parent-Child Relationship*

Item	Component 1	h^2
I feel like my parents want to be with me	.80	.64
I feel that I usually fit in with my parents	.79	.62
I feel I have a strong connection with my parents	.79	.62
When I am with my parent(s), I feel like I belong	.76	.57
When I want to do something for fun, I can usually find a parent to join me	.74	.55
I feel like my parents and I do a lot of things together	.70	.49
I have a lot in common with my parents	.68	.46
Eigenvalue	3.95	
% of variance	56.43%	
Cronbanch's alpha coefficient	.87	

Table 6. *Summary of Principal Component Analysis Loadings for Peer Relationship Measure*

Item	Component 1	h^2
I feel I have a strong connection with other students	.81	.66
I feel like other students want to be with me	.81	.66
I feel that I usually fit in with other students around me	.78	.60
I feel like other students and I do a lot of things together	.76	.58
When I want to do something for fun, I can usually find friends to join me	.75	.57
When I am with other students, I feel like I belong	.71	.51
I have a lot in common with other students	.70	.50
Eigenvalue	4.07	
% of variance	58.09%	
Cronbanch's alpha coefficient	.88	

Note. h^2 represents communality values.

Table 7. *Summary of Principal Component Analysis Loadings for Teacher-Child Relationship Measure*

Item	Component 1	h^2
I feel I have a strong connection with my teachers	.83	.69
I feel that I usually fit in with my teachers	.79	.63
I feel like my teachers and I do a lot of things together	.79	.63
When I want to do something for fun, I can usually find a teacher in school to join me	.78	.61
I feel like my teachers want to be with me	.77	.59
I have a lot in common with my teachers	.73	.54
When I am with my teacher(s), I feel like I belong	.70	.49
Eigenvalue	4.17	
% of variance	59.61%	
Cronbanch's alpha coefficient	.89	

Note. h^2 represents communality values.

4.1.2.3 General Social Assertiveness Scale (GSAS)

A Principal Components Analysis (PCA) was performed on the 11 items of the general social assertiveness scale (GSAS) using an oblimin rotation technique. The correlation coefficients were above .3 and below .8, which supported the factorability of the matrix (Field, 2009). The KMO value of .88 exceeded the conventional limit, indicating adequacy of the sample size for the analysis. Bartlett's test of sphericity was also statistically significant χ^2 (55) = 2124.98, $p < .001$, demonstrating that correlation coefficients between items were larger enough to perform a PCA. Based on the PCA, two components were extracted, with eigenvalues exceeding 1, explaining 37.62% and 10.41% of the variance, respectively. In combination, the components explained 48.03% of the total variance. Although the scree plot somewhat indicated a clear break that would justify retaining one component, Monte Carlo parallel analysis results indicated the presence of two components, which supported the results from the eigenvalues.

In accordance with previous studies (Gambrill & Richey, 1975; Wills et al., 1989) the first component with eight items represents General Self Assertion (GSA). According to Gambrill and Richey (1975), this represents an individual's ability to stand up or to express their opinions or "feelings of disagreement, anger, dissatisfaction, and annoyance" openly in everyday challenging social situations such as "asking a person annoying you to stop" or to "ask for service when you are not getting it" (p.168). The second component, with three items, represents positive social assertiveness and can be described as an individual's ability to express his or her positive "feelings of love, affection, admiration, approval, and agreement" (Gambrill & Richey, 1975, p.168), for example, by telling someone that you like them or complimenting a person you are going out with.

Given that cybervictimization is a challenging phenomenon that may demand social competencies to stand up and challenge the situation or behaviour openly, the three items on the social subscale were not used because the items were mainly about dyadic-dating relationships. The first component, that is, general self assertiveness (GSA) was considered more meaningful and was used in the subsequent analyses. The composite variable was created by taking the mean of the eight items of general social assertiveness sub-scale. Consistent with the psychometric analysis on previous studies (Gambrill & Richey, 1975; Wills, Baker, & Botvin, 1989), the general social assertiveness scale demonstrated a recommendable internal consistency with a Cronbach's alpha coefficient of .81 (see Table 8).

Table 8. *Summary of Principal Component Analysis Loadings for General Social Assertiveness Scale*

	Component		
Item	1	2	h^2
Tell people when you feel they have done something that is unfair	.82		.60
Ask a person annoying you to stop	.78		.58
Ask for service when you are not getting it	.76		.56
Return items that you are not satisfied with	.71		.46
Request that someone return borrowed things	.60		.41
Express an opinion that differs from what the person you are talking to is saying	.49		.49
Ask whether you have offended someone	.47	.34	.27
Resist sales pressure from a salesman/woman	.35		.22
Tell someone you like them		.82	.63
Compliment a person you are going out with		.75	.65
Start a conversation with a stranger		.64	.42
Eigenvalues	4.14	1.15	
% of variance	37.62	10.41	
Cronbach's (α)	.81	.63	

Note. h^2 represents communality values.

4.1.2.4 Rosenberg Self-Esteem Scale (RSE)

A Principal Components Analysis (PCA) was conducted on the 10 items of the RSE. The presence of correlation coefficients of above .3 and below .8, the KMO of .82, and a significant Bartlett's test of sphericity χ^2 (45) = 1771.02, $p < .001$, all suggested the suitability of the matrix and sampling adequacy to conduct the analysis. Based on item wording (i.e., 5 positively and 5 negatively worded items), two components with eigenvalues exceeding 1 were extracted from the 10 items. A similar loading pattern with the response sets or wording representing positive self-appraisal and negative self-appraisal has also been reported in previous studies, and in these cases the conclusion has been that only one construct was being assessed, despite the presence of two factors (Carmines & Zeller, 1979; Greenberger et al., 2003; Hensley & Roberts, 1976). It was argued that "the two dimensions (positive and negative) are merely an artifact of item wording" (Greenberger et al., 2003, p.1241).

Though low, the inverse correlation between the two dimensions in the present study may also echo items wording argument in the reviewed studies. As such, RSE scale was considered to assess one construct in this study. To improve reliability, item 143 (“I wish I could have more respect for myself”) was dropped and a composite variable was created by taking the mean of the nine items of the RSE scale. The measure demonstrated a moderate internal consistency, with a Cronbach’s alpha coefficient of .67 (see Table 9).

Table 9. *Summary of Principal Component Analysis Loading for Self-esteem Measure*

Item	Component		h^2
	1	2	
I feel that I'm a person of worth	.80		.65
I am able to do things as well as most other people	.75		.56
I wish I could have more respect for myself	.75		.56
I feel that I have a number of good qualities	.73		.54
On the whole, I am satisfied with myself	.63		.40
I take a positive attitude toward myself	.61		.36
I certainly feel useless at times		.80	.64
At times I think I am no good at all		.75	.56
I feel 1do not have much to be proud of		.64	.42
All in all, I am inclined to think that I am a failure		.60	.45
Eigenvalues	3.24	1.90	
% of variance	32.39	19.01	
Cronbach's (α)	.76	.65	

Note. h^2 represents communality values.

4.1.2.5 Coping Strategies Scale

The final Principal Components Analysis (PCA) was conducted for the items identifying coping strategies used (50 items) and coping strategies considered to be effective (50 items). As with the previous measures, most of the correlations were above .3 and below .8, and the KMO values of .93 for coping strategies and .94 for effectiveness supported the adequacy of the measure for conducting PCA. In addition, Bartlett's tests of sphericity were statistically significant for coping strategies used χ^2 (1225) = 1400.68, $p < .001$ and χ^2 (1225) = 14323.45, $p < .001$ for effectiveness. This provided further evidence that the correlation coefficients between items were large enough to perform the analysis.

In the preliminary PCA on items for the coping strategies used, 10 components with eigenvalues exceeding one, and in combination explaining 56.30% of the total variance, were extracted. However, the scree plot indicated an ambiguous break at the third and the fifth component, and the Monte Carlo parallel analysis results indicated seven unique components. As a suggested procedure (Field, 2009; Pallant, 2010; Tabachnick & Fidell, 2013), a new PCA that forced seven components was re-run. The seven components in combination explained 49.69% of the total variance. Apart from demonstrating simple structure loading pattern (i.e., items loading strongly on only one component), only one item ("Cry by myself") loaded strongly onto the fifth component. Based on the factor analysis literature, with an exception of few cases where a component has two strongly related and meaningfully interpreted variables (Tabachnick & Fidell, 2013), to be retained, a component should have at least three items and should be well defined (Field, 2009; Tabachnick & Fidell, 2013), this item was dropped and another PCA with six components was re-run. In this analysis, the six components, which in combination explained 47% of the total variance included: (1) Active decision making coping, (2) Retaliation coping, (3) Distraction coping, (4) Support-seeking coping, (5) Avoidance coping, and (6) Active understanding coping.

Although four of the coping strategies, (active, distraction, support seeking and avoidance) replicated the pattern from the original measure (Ayers et al., 1996), for the current data, active coping was represented by two components: active understanding and active decision-making. This is not surprising given that these two components were intended to be part of the original active coping subscale (see Ayers, & Sandler, 1999). Based on Ayers and colleagues, active understanding represents individuals' efforts to find meaning and/or try to understand the problem better, while active decision-making represents constructive planning

and ideas or thoughts on ways to solve the problem. Conceptually, both understanding and decision-making components involve mental processes, and a strong positive association between the two subscales ($r = .65$, $p < .01$, two-tailed) suggested that they can be treated as one factor despite the principal component analysis results. Hence, the two sub-scales were used to compute an overall mean composite score for active coping.

Contrary to the original measure where eight items represented avoidance coping, in this study, only two out of the three items that meaningfully loaded onto avoidance coping were used in computing the composite score. Three other avoidance items loaded onto active coping and other items did not load onto any of the components. Also, the five items on retaliation adapted from Frey (personal communication through e-mail, January 9, 2015) and other the two items modified from Ayers et al. (1996) loaded strongly on the retaliation coping component. Overall, based on the identified loading pattern, nine items that had small loading values or did not load onto any of the component, one item that stood alone as a component and the other five items that loaded onto other components but lacked meaningful interpretation were dropped.

In sum, a total of 35 items from the five major identified coping strategies including active (13 items), avoidance (2 items, which had excellent loading and were conceptually meaningful; Tabachnick & Fidell, 2013), support seeking (6 items), distraction (7 items), and retaliation coping (7 items) were used in the subsequent analyses. Consistent with the previous studies (Ayers & Sandler, 1999; Ayers et al., 1996; Konishi, 2003) and with an exception of the avoidance scale that had a low internal consistency with a Cronbach alpha coefficient of .59, the Cronbach alpha coefficients for the other four scales were good; .89 for active coping, .84 for retaliation coping, .81 for support seeking coping, and .79 for distraction coping (see Table 10).

With respect to the effectiveness of the coping strategies, a similar loading pattern was observed. In particular, a total of nine components with eigenvalues exceeding one were extracted, and in combination the components explained 55.38% of the total variance. Upon inspection of the scree plot, three breaks were identified at the third, fifth, and tenth components making it difficult to decide on the number of components to retain. Contrary to the eigenvalues and ambiguous scree plot results, further exploration using Monte Carlo parallel analysis technique identified six components. A new PCA forcing six components was re-run (Field, 2009; Pallant, 2010; Tabachnick & Fidell, 2013) and a simple structure loading pattern was demonstrated. Similar to the pattern demonstrated on coping strategies described earlier, some items did not load on any components or had small loading values to be displayed or considered for interpretation. From the 50 items, a total of eleven items were excluded. The identified six components, which in combination explained 48.34% of the total variance included: (1) active understanding coping, (2) retaliation coping, (3) distraction coping, (4) active decision making coping, (5) support seeking coping, and (6) avoidance coping.

Similar to above, active decision making and active understanding were merged to form active coping, and the mean score of the two subscales were used in computing the composite score for active coping (see Ayers, & Sandler, 1999; Ayers et al., 1996). Therefore, the five major components used for subsequent analyses related to effective coping strategies included active coping (14 items), avoidance coping (5 items), support seeking coping (6 items), distraction coping (7 items), and retaliation coping (7 items). Consistent with the previous studies (Ayers, & Sandler, 1999; Ayers et al., 1996; Konishi, 2003), the scales demonstrated adequate internal consistency with the Cronbach alpha coefficients of .69 for avoidance coping,

.88 for active coping, .87 for retaliation coping, .81 for support seeking coping, and .80 for distraction coping.

Table 10. *Summary of Principal Component Analysis Loadings for Coping Strategies Used*

Items	Component						h^2
	1	2	3	4	5	6	
Active decision making							
Try to notice or think about only the good things in life	.68						.54
Think about what I could do before I do something	.66						.53
Think about what would happen before I decide what to do.	.57						.57
Figure out what I can do by talking with one of my friends.	.57						.48
Imagine how I would like things to be.	.53						.46
Do something to make myself feel better (for example, deleting the information).	.53						.50
Think about why I have been harassed or cyberbullied.	.46						.43
Retaliation coping							
Get back at the person by excluding them or spread stories that hurt his/her reputation		.76					.58
Get back at the person by threatening or insulting him/her.		.76					.56
Organize with my friends to get back at the person in some ways.		.75					.59
React angrily on the phone or Internet.		.75					.61
Tell my friends I wish the bully would get hurt.		.67					.47

Items	Component						h^2
	1	2	3	4	5	6	
Think about ways that I could punish the person.		.62					.52
Let out feelings to others (e.g., sister, my brother, other students, housegirl/boy, my pet or stuffed animal, etc.).		.48					.32
Distraction coping							
Do some exercise.			.67				.55
Watch TV.			.62				.47
Play sports.			.61				.52
Go walking.			.58				.42
Do something else like play video games.			.58				.47
Read a book or newspaper.			.57				.48
Go bicycle riding.			.45				.33
Social support seeking coping							
Try to solve the problem by talking about it with my mother or father.				.71			.60
Talk about how I am feeling with my mother or father.				.65			.59
Talk to my brother or sister about the problem and how to make things better.				.62			.55
Talk with my brother or sister about my feelings				.60			.50
Try to figure out what I can do by talking to adult who is not in my family.				.50			.45
Talk about how I am feeling with an adult who is not in my family				.43			.35
Avoidance coping							
Try to stay away from mobile phones and devices that connect to the Internet.					.76		.61
Try to stay away from the problem by staying offline.					.70		.53

Items	Component						h^2
	1	2	3	4	5	6	
Active understanding coping							
Try to figure out why things like cyberbullying happen.						.68	.58
Think about what I need to know so I can solve my problem with cyberbullying.						.67	.62
Think about how best to handle my problems with cyberbullying.						.64	.59
Tell myself it is not worth getting upset about cyberbullying.						.58	.50
Try to understand and think more about the problem of cyberbullying.						.56	.56
Think about what I can learn from experience of being cyberbullied.						.52	.50
Eigenvalues	12.17	3.94	2.39	1.88	1.50	1.46	
% of variance	24.84	8.05	4.89	3.84	3.06	2.98	
Cronbach's (α)	.82	.84	.79	.81	.59	.85	

Note. h^2 = communality values. Coping strategies components. (1) Active decision making, (2) Retaliation, (3) Distraction, (4) Support seeking, (5) Avoidance, and (6) Active understanding.

Correlations were run between all items from all components to see if there were any unexpected patterns or relationships. With an exception of some of the items on the retaliation coping, which did not significantly correlate with other items from other components, findings largely showed significant positive correlations among items. A unique pattern of positive correlation was revealed among all items on active decision making and active understanding copings subscales, which also supported researcher's decision to merge the two components.

4.1.3 Research Question 1

Research Question 1 focused on the prevalence rate of cyberbullying and cybervictimization experiences among adolescents in Tanzania, as well as the associated

qualitative negative effects on victims. Questionnaire data were used to answer the first part of research question one, while qualitative data were used to understand the second part of this question (on the negative effects of cyberbullying on victims).

Descriptive statistics were employed to examine cyberbullying and cybervictimization experiences among adolescents. As can be seen in Table 10, participants reported low levels of both cyberbullying and cybervictimization (*M* =.20, *SD* =.49; *M* =.25, *SD* =.43 respectively), which is a typical in the field. Within each of the 12 cyberbullying behaviours that were examined, prevalence ranged from 6% to 20% across the various cyberbullying behaviours assessed (anyone who scored a 1 or higher on each of the 12 items), and for cybervictimization the range was 8% to 40%. Overall, 42% of adolescents admitted to having engaged in any cyberbullying behaviour (scored a 1 or higher on any of the 12 items) and 58% reported to having been the recipient of some form of cyber-aggression. With regard to sex differences, 46% of male and 37% of female adolescents admitted engaging in some form of cyberbullying behaviour, while 60% of male and 55% of female adolescents reported to having been victimized online in some way.

Table 11. *Mean Values and Standard Deviations for Cyberbullying and Cybervictimization*

	Cyberbullying		Cybervictimization	
	M (SD)	*n*	*M (SD)*	*n*
Overall	.20 (.49)	773	.25 (.43)	777
Female students	.17 (.46)	373	.23 (.42)	376
Male students	.22 (.53)	398	.27 (.44)	399

Negative effects of cyberbullying on victims. As can be seen from the thematic analysis of the qualitative data presented in Table 12 below, victims reported experiencing

negative emotional, social, cognitive, behavioural, and academic outcomes as a result of online victimization. For each identified theme, a definition and an exemplar is provided.

Table 12. *Themes on the Negative Effects of Cyberbullying from the Interview Participants*

Themes	Description	Examples of Participants' Responses
Negative emotional affect	Feeling upset, sad, embarrassed, frustrated, angry, worried, and insecure	"I just became centre for attention in the neighbourhood and in my family. So you just feel hopeless and worried all the time. It is very embarrassing!" a 15-year-old female student. "It was very painful and used to cry in shower. Sometimes for two hours" a 15-year-old female. "You always feel sad, shame, thinking why me? It also leads to fear or worry. In short, it is so painful!" an 18-year-old male student.
Negative social effect	Impaired relationship with others including peers, friends, and adults.	"We won't invite you to our parties or functions because you are boring. And I was like ok, you see me like am a looser, then I will go to another group" a 16-year-old female student. "In fact, my father came across such dirty photos that were posted online, and he was mad at me. He was so much irritated seeing those photos and reprimanded me to behave and focus on studies" a 17-year-old male student. "It was hard to be at school because of how other students perceived me" a 17-year-old male student.
Negative cognitive effect	Spending more time ruminating over the incident and having impaired thoughts	"Sometimes you may think of committing suicide but I know this is not good before God" a 17-year-old male student. "So you spend a lot of time thinking on why so and so is doing this to me. I have done nothing wrong, I had never insulted or harassed him, so just asking yourself questions that have no answers" a 16-year-old female student. "You find yourself thinking a lot on what was done to you online. You just think you're worthless and unfit in the community compared to others" a 15-year-old male student.
Negative behavioural effect	Avoiding or shying away from typical behaviours/practices	"Even when you wanted to call a friend, you will just switch it on, making a call then switching it off" a 15-year-old female student. "The abuse and the harassments made me to stay away from Facebook and Instagram for two weeks" an 18-year-old female student. "Yeah, I locked myself in! I do not remember well, but it was from 1pm when my mother was preparing lunch in

Themes	Description	Examples of Participants' Responses
		the kitchen to 9pm at night when she called me for dinner. She asked...what is wrong with you today? I replied, I am busy studying" a 14-year-old male student.
Negative Academic effect	Lack of concertation and drop in academic performance	"First of all, it affected my performance in academics. No matter how hard I try to study, I just feel like a failure! I can't concentrate on my studies anymore" a 16-year-old female student. "In fact, it affected my performance in the national form two (grade 9) examinations. I just thank God that I passed but not to my expectations" a 17-year-old male student.
Other effects	Any other effect	"Given that I have a headache problem; such rumors sometimes trigger my headache to the extent of fainting at school. For me, it really affects my health!" a 16-year-old female student. "Sometimes skipped meals for the whole day" a 17-year-old female student. "The other thing is that you just feel very weak" a 16-year-old female student.

4.1.4 Research Question 2

For the second research question, which explored the relationship between socio-demographic factors and technological access to cyberbullying and cybervictimization for Tanzanian adolescents, two separate hierarchical multiple regressions were conducted (the outcomes were cyberbullying and cybervictimization, respectively). The four socio-demographic variables included grade, sex, number of siblings, and parent education. These were entered into Block 1 of the regression model. The four variables pertaining to technological access were the number of cellphones at home, time spent online, accessing the Internet in a private location, and sharing phones or handsets with peers. These were entered into Block 2 of the model. Finally, the two-way interactions for grade and time online, sex and time online, grade and private location, gender and private location, grade and sharing phone, as well as sex and sharing phone were entered in Block 3.

Cyberbullying. As presented in Table 13, none of the four socio-demographic variables (i.e., grade, sex, number of siblings, and parent education) were significantly associated with adolescents' reported engagement in cyberbullying. As can be seen in Block 2 in Table 13, two of the access to technology variables were significant: time online and sharing phones or handsets emerged as significant, with higher levels being associated with engagement in cyberbullying ($\beta = .19$, $p < .001$ and $\beta = .13$, $p < .01$ respectively; $R^2 = .07$, $\Delta R^2 = .06$, $p < .001$).

Interactions were entered into the third model (Block 3), and as can be seen in Table 13, only grade by time online ($\beta = .29$, $p < .05$) and sex by time online ($\beta = .21$, $p < .01$) emerged as significant ($R^2 = .11$, $\Delta R^2 = .04$, $p < .05$). As can be seen in Figure 1, for older adolescents, more time spent online was associated with higher engagement in cyberbullying incidences compared with younger adolescents. In addition, for male adolescents, more time spent online was associated with higher reported engagement in cyberbullying behaviours relative to female adolescents (see Figure 2).

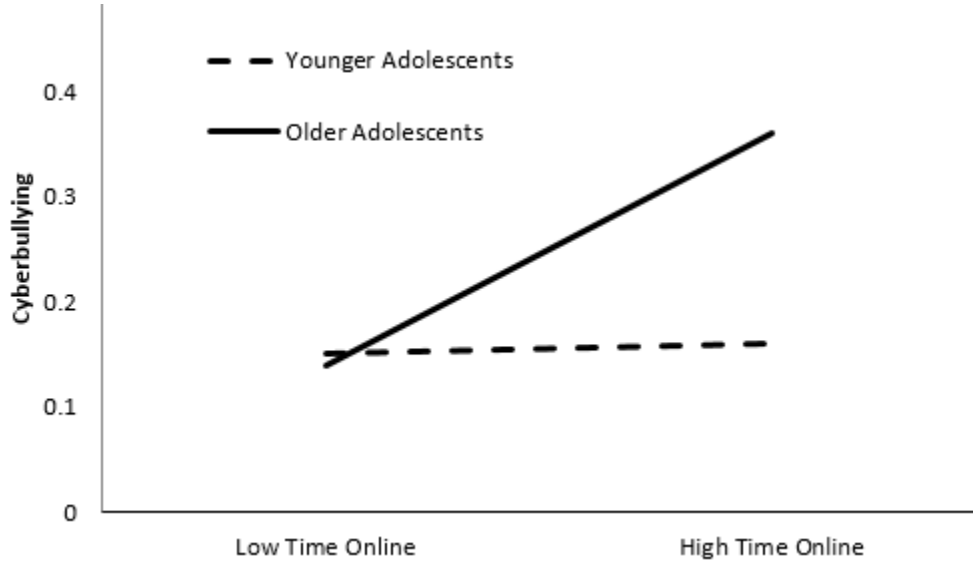

Figure 1. Cyberbullying as a function of time online and grade

Table 13. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Socio-Demographic Variables, Access to Technology, and Cyberbullying*

DV = Cyberbullying	*β Block 1*	*β Block 2*	*β Block 3*	R^2	$\triangle R^2$
Block 1				.00	.00
Grade	.01				
Female	-.06				
Number of siblings	.01				
Parent education level	.02				
Block 2				.07	.06***
Grade		-.01			
Female		-.03			
Number of siblings		-.00			
Parent education level		.02			
Number of phones at home		-.01			
Time spent online		.19***			
Private location		.07			
Sharing phones/handset		.13**			
Block 3				.11	.04**
Grade			.01		
Female			-.12		
Number of siblings			-.00		
Parent education level			-.01		
Number of phones at home			-.01		
Time spent online			-.16		
Private location			.15		
Sharing phone/handset			.38**		
Grade x Time spent online			.29*		
Female x Time spent online			.21**		
Grade x Private location			-.09		
Female x Private location			-.01		
Grade x Sharing phone			-.28		
Female x Sharing phone			-.05		

Note. *$p < .05$. **$p < .01$. ***$p < .001$. Gender coded 1 for females, 0 for males. Private location coded 0 for non-private and 1 for private location. Sharing cellphone coded 0 for not sharing and 1 for sharing cellphone.

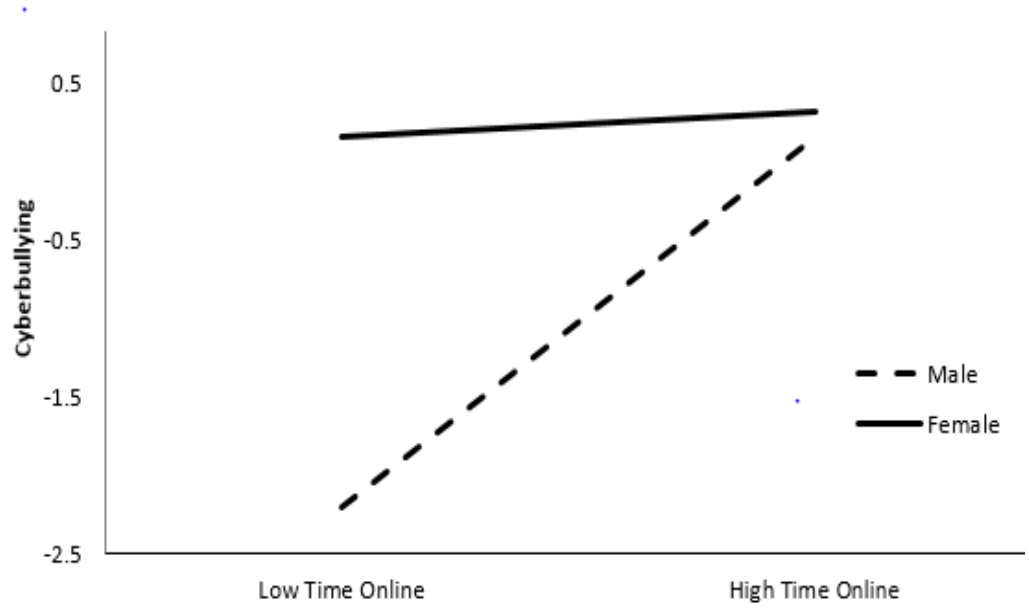

Figure 2. Cyberbullying as a function of time online and sex

Cybervictimization. Similar to cyberbullying, the socio-demographic variables in Block 1 were not significantly related to the likelihood of being victimized online. As can be seen in Block 2, Table 14, with the exception of the number of cellphones at home, time spent online, accessing the Internet in a private location, and sharing phones or handsets were all significantly related with being victimized online. That is, the more time adolescents spent online, the more they used phone in a private location, and/or the more they shared phone or handset the higher the reported incidences of being victimized online (β *=.14, p <.01*; β *=.14, p <.01*; β *=.15, p <.01* respectively; R^2 =.09, ΔR^2 =.08, p <. 001). Interactions were entered into the third model, but were not significant, hence, were not included in the model.

Table 14. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Socio-Demographic Variables, Access to Technology, and Cybervictimization*

DV = Cybervictimization	*β Block 1*	*β Block 2*	*β Block 3*	R^2	$\triangle R^2$
Block 1				.01	.01
Grade	-.00				
Female	-.05				
Number of siblings	.08				
Parent education level	.06				
Block 2				.09	.08***
Grade		-.03			
Female		-.02			
Number of siblings		.06			
Parent education level		.04			
Number of phones at home		.03			
Time spent online		.14**			
Private location		.14**			
Sharing phone/handset		.15**			

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

4.1.5 Research Question 3

To answer research question 3, which explored various coping strategies used by victims of cyberbullying, as well as victims versus non-victims' perceptions of what are the most effective coping strategies, both qualitative and quantitative data and analyses were used. Questionnaire data were used to compare the perceived effectiveness of the different coping strategies for victims versus non-victims. Qualitative data were then used to shed more light on why the strategy was considered by the victims to be effective.

To determine whether there is a significant difference between cyberbullying victims (adolescents who have experienced some levels of cybervictimization in their life time) and non-victims (adolescents who have never been cyberbullied in their life time) on the perceived

effectiveness of different coping strategies, a one-way multivariate analysis of variance (MANOVA) was conducted with 2-victims' categories as independent variables and effectiveness ratings for the five coping strategies as dependent variables.

Results of a multivariate analysis of variance (MANOVA) revealed a statistically significant difference between victims and non-victims on the coping strategies, F (5, 756) = 3.13, p = .01; Wilks' Lambda = .98; η^2 = 2%. A follow up examination of univariate analysis (ANOVA) in Table 14 showed a statistically significant difference between victims and non-victims on active coping, F (1, 760) = 4.14, p = .04, η^2 = 0.5%; avoidance coping, F (1, 760) = 3.97, p = .05; η^2 = 0.5%; distraction coping, F (1, 760) = 5.99, p = .01, η^2 = 0.8%; and retaliation coping, F (1, 760) = 9.35, p = .00; η^2 = 1.2%, with victims more likely to consider retaliation, distraction, active, and avoidance as the most effective ways to cope with cyberbullying than non-victims. Means, standard deviations, parameter estimates, and effect sizes are presented in Table 15. Similar analysis was run with sex and grade and there were no interaction effects.

In addition to the MANOVA analyses, the qualitative interview data were used to shed light on coping strategies used by adolescent victims of cyberbullying and why they considered particular strategies to be effective. Using a deductive - thematic analysis approach (Varjas et al., 2005), five major coping strategies were described by participants. In particular, participants reported using active coping, avoidance coping, social support seeking, distraction, and retaliation coping strategies, respectively. Each strategy, along with a definition and exemplar is provided in Table 16.

Table 15. *Descriptive Statistics and ANOVA Results on Perceived Effectiveness of the Coping Strategies for Cyberbullying Victims Versus Non-Victims*

Coping strategy	Victims *n=439*	Non-victims *n=323*			
	M (SD)	*M (SD)*	*F*-test	*p*-value	η^2
Active coping	1.52 (.73)	1.42 (.59)	4.14	.04	.01
Avoidance coping	1.34 (.70)	1.23 (.81)	3.97	.05	.01
Social support coping	1.30 (.75)	1.28 (.80)	.08	.78	.00
Distraction coping	1.57 (.65)	1.45 (.73)	5.99	.01	.01
Retaliation coping	.55 (.56)	.41 (.67)	9.35	.00	.01

η^2 = Partial eta squared

Table 16. *Major Themes on Coping Strategies Used from the Interview Participants*

Theme	Description	Examples of Participants' Responses
Active coping	Constructive attempts or efforts to manage or handle the situation	"I started calling telling them I don't like that behaviour" a 16-year-old male student. "I also audited my Facebook friends' list and blocked all people who spread rumours and pretended to know much about me" a 14-year-old male student.
Avoidance coping	Behavioral or cognitive efforts to avoid the stressful situation	"When they bully me online, I just ignore it and I feel peace!" a 16-year-old male student. "Leaving Facebook...is helpful because you are no longer bothered by people. You become free!" a16-year-old male student.
Support seeking coping	Using other people as resources for help and support	"Share with my friends for advice" a 15-year-old female student. "I also use adults who are in Facebook…So I share with an adult that so and so is doing...not exactly that they are following me for same sex relationship, which is shame! I just tell them that I am being threatened online, and

Theme	Description	Examples of Participants' Responses
		because adults are respected they are able to confront the perpetrators and make them stop their inappropriate behaviours online" a 14-year-old male student.
Distraction coping	Engaging in some distracting activities or entertainment to avoid thinking about the problem	"Okay, I would just go somewhere to play pool with strangers. I also love swimming, and when I swim, I do it alone not with my friends. And when I don't have cash to go to play pool, I just listen to music. I love smooth melody songs!" a 16-year-old female student. "I mainly like playing games, listening to music, and watching TV/Video" a 15-year-old male student.
Retaliation coping	Revenging or getting back to the person harshly	"Whenever he sent abusive texts, we replied back in the same way by sending more painful insults" a 15-year-old female student. "When you get the person's photo you also post it public on Facebook" a 16-year-old male student.
Others	All other possible strategies including doing nothing	"I feel there is no any one effective strategy. You simply do it to reduce stress. For example, staying away from Facebook will not stop the perpetrators from continuing posting or commenting you badly online" a 15-year-old male student.

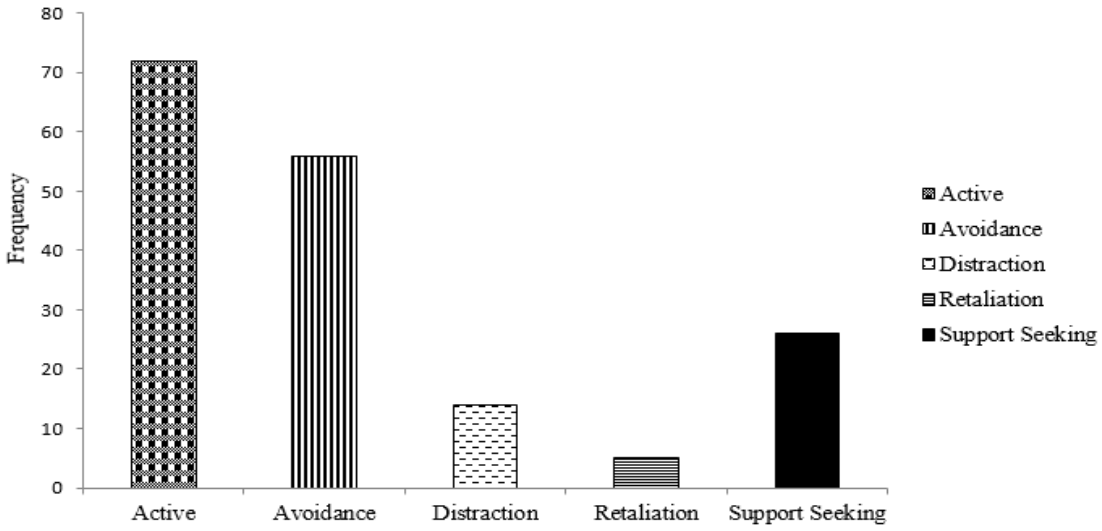

Figure 3. Frequency of the interviewed participants on perceived effective coping

In addition to this, participants provided responses as to why a strategy seemed effective. Using an inductive – thematic analysis approach (Varjas et al., 2005), the different coping

strategies were considered effective by adolescents for various reasons. For example, a strategy might help victims find relief from stress (i.e., feeling having some breathing space to calm down); give victims time to forget and refocus (i.e., able to forget about the problem and focus on other important things in life); hold the perpetrators accountable (i.e., making the perpetrator feel responsible for his/her actions); and make the victim inaccessible (i.e., unavailable to the perpetrators). In Table 17 below, for each coping strategy, an explanation for why it is effective, and an exemplar response is provided.

Table 17. *Coping Strategies and Sub-Themes on Why Interview Participants Find It to be Effective*

Coping strategy	Why is it effective?	Examples of Participants' Responses
Active coping	Held the perpetrators accountable	"When I confronted him, he was able to stop" an 18-year-old male student.
	Inaccessible	"...all those people I have blocked do not bother me anymore! So it helps me" a 16-year-old female student. "Changing my phone number. They did not reach me because they did not have my new number" a 17-year-old male student. "I also reported those who introduced themselves requesting for the same sexual relationship to the Facebook administrator who blocked them" a 14-year-old male student.
Avoidance coping	Get relief from stress	"So, I find it better to go to bed and sleep to reduce anger and bad thoughts on what had happened to me" a 16-year-old female student. "...you just ignore or let it go because God knows! Let me just forgive. Therefore, my anger slowly disappeared and had to continue with life" a 16-year-old female student. "Just ignoring them. An argument or conflict will never come to an end if a person talks and you keep on replying back. But if you decide to remain quiet, the person will talk and talk but will reach a point where s/he will have to stop" a 16-year-old female student.
	Inaccessible	"I think leaving Facebook. It is helpful because you are no longer bothered by people. You become free!" a 16-year-old male student.

Coping strategy	Why is it effective?	Examples of Participants' Responses
		"Switching off my phone most of the time...this is because they won't access you. It also reduces disturbance" a 15-year-old female student.
	Helped to forget and refocus	"By ignoring, you forget all bad things that happened to you" a 15-year-old male student. "After ignoring them, you get time to concentrate in your studies because you do not think much about social media" a 15-year-old male student.
Support seeking	Received help or advice	"Talking to my uncle was very helpful! Or else, I would have just decided to fight the perpetrator what I think would have many physical, health, and academic risks" a 17-year-old male student. "She (sister) advised me to destroy the current Sim-card and get a new one" a 14-year-old female student.
	Held the perpetrators accountable	"This is because by reporting to the appropriate authorities many people including the perpetrators will know and may be challenged to leave their inappropriate behaviours" a 17-year-old female student. "So seeing an adult intervening, others will say eh! This teenager seems to be annoyed by my behaviour and have decided to share it with adults. This tends to make others stop their inappropriate behaviours" a 14-year-old male student.
	Get relief from stress	"Also, by reporting, you tend to believe that your issue will be addressed and this by itself makes you feel free from stress" a 17-year-old female student. "When you spend time with people, telling stories and having fun...somehow helps me forget about what had happened to me. It reduces anger, and bad memories tend to disappear" a 16-year-old female student.
Distraction coping	Get relief from stress	"So when I get irritated I just watch a soccer game or go to the field to play soccer with my friends. This makes me feel happy and somehow forget about the stressful problem" a 16-year-old female student.
	Helped to forget and to refocus	"Playing games make you forget about the bad experiences that happened to you...games involve a lot of thinking, this helps in clearing bad feeling and thoughts from your mind" a 15-year-old male student. "To me I think music! I love it so much! It inspires me in ways that makes me feel so good. Makes me dream of future, makes me feel how wonderful life is. And

Coping strategy	Why is it effective?	Examples of Participants' Responses
		sometimes I create my own songs" a 16-year-old female student.
Retaliation	Held the perpetrators accountable	"You just revenge to make the person know that you're also capable of fighting him online. Just make the person also feel the pain!" a 16-year-old male student. "Retaliating back. This taught her a lesson and made her stop her behaviour" a 17-year-old female student.

4.1.6 Research Question 4

For research question four, which explored the relationship between personal individual factors and social factors and coping strategies, a series of hierarchical multiple regressions were performed for the five coping strategies (active, social support, avoidance, distraction, and retaliation). Demographic variables (i.e., grade and sex) were entered in Block 1. Individual personal characteristics (general 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 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 below.

Active coping strategy. The two demographic variables (i.e., sex and grade) were entered in Block 1. As can be seen in Table 18, grade emerged as significant, with higher grade level being associated with higher reported use of active coping ($\beta = .13$, $p < .001$; $R^2 = .02$, $\Delta R^2 = .02$, $p < .01$). In Block 2, general assertiveness emerged as significant, with higher levels being associated with the higher reported use of active coping strategies ($\beta = .47$, $p < .001$; $R^2 = .25$, $\Delta R^2 = .23$, $p < .001$). The social factors (relationships with parents, peers, and teachers) were entered into Block 3, and as can be seen in Table 18, the only significant social variable was teacher-child relationship, with more positive reported levels of teacher-child relationship being

associated with higher reported use of active coping strategies ($\beta = .09$, $p < .05$; $R^2 = .26$, $\Delta R^2 = .01$, $p < .05$). Interactions were entered into the fourth block (Block 4), but were not found to be significant predictors, and hence were not included in the model.

Table 18. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Social Variables, and Active Coping*

DV = Active Coping (AC)	*β Block 1*	*β Block 2*	*β Block 3*	R^2	$\triangle R^2$
Block 1				.02	.02**
Grade	.13***				
Female	-.02				
Block 2				.25	.23***
Grade		.06			
Female		-.01			
General social assertiveness (GSA)		.47***			
Self-esteem		.05			
Block 3				.26	.01*
Grade			.06		
Female			-.01		
General social assertiveness (GSA)			.43***		
Self-esteem			.02		
Parent-Child relationship(PCR)			-.02		
Peer-relationship			.04		
Teacher-Child relationship			.09*		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Social support seeking coping strategy. As can be seen in Table 19, the two demographic variables (i.e., sex and grade) were entered in Block 1 and grade emerged as significant, indicating that the higher the grade level, the higher the reported level of seeking for social support ($\beta = .09$, $p < .05$; $R^2 = .01$, $\Delta R^2 = .01$, $p < .05$). General assertiveness (but not self-esteem) was significant in Block 2, with greater assertiveness being associated with the higher reported use of social support-seeking coping strategies ($\beta = .24$, $p < .01$; $R^2 = .07$, $\Delta R^2 = .06$, $p < .001$). The social factors (relationships with parents, peers, and teachers) were entered into Block 3, and as

can be seen from the standard coefficient values in Table 19, the only significant social variables were parent-child and teacher-child relationships, with more positive relationships in each case being associated with higher reported use of social support-seeking coping strategies ($\beta = .11$, $p < .05$; $\beta = .20$, $p < .001$ respectively; $R^2 = .12$, $\Delta R^2 = .05$, $p < .001$). Interactions were entered into the fourth block (Block 4), but were not found to be significant, and hence were not included in the model.

Table 19. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Social Variables, and Social Support Seeking Coping*

DV = Support Seeking Coping (SSC)	*β Block 1*	*β Block 2*	*β Block 3*	R^2	$\triangle R^2$
Block 1				.01	.01*
Grade	.09*				
Female	-.03				
Block 2				.07	.06***
Grade		.06			
Female		-.03			
General social assertiveness (GSA)		.24**			
Self-esteem		.01			
Block 3				.12	.05***
Grade			.06		
Female			-.02		
General social assertiveness (GSA)			.18***		
Self-esteem			-.05		
Parent-Child relationship (PCR)			.11*		
Peer-relationship			-.04		
Teacher-Child relationship (TCR)			.20***		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Avoidance coping strategy. As presented in Table 20, the two demographic variables (grade and sex) were entered in Block 1 and all were significantly associated with avoidance coping, indicating that the higher the grade level the higher the reported use of avoidance coping

(β =.14, p<.01), and female participants were less likely to use avoidance coping strategies compared to male participants (reference group) (β = -.08, p<.05; R^2 =.02, p<. 01). In Block 2, general assertiveness was significantly related to the use of avoidance coping strategies, with the greater assertiveness being associated with the higher reported use of avoidance coping (β =.16, p<.001; R^2 =.05, ΔR^2 =.03, p<. 001). The social factors were entered into Block 3, but as can be seen in Table 20, none of the three variables were significant. Interactions were also explored (Block 4), but were not found to be significant, and hence were not included in the model.

Table 20. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Social Variables, and Avoidance Coping*

DV = Avoidance Coping (AVC)	*β Block 1*	*β Block 2*	*β Block 3*	R^2	$\triangle R^2$
Block 1				.02	.02**
Grade	.14**				
Female	-.08*				
Block 2				.05	.03***
Grade		.11**			
Female		-.08*			
General social assertiveness (GSA)		.16***			
Self-esteem		.01			
Block 3				.05	.00
Grade			.11**		
Female			-.08*		
General social assertiveness (GSA)			.15***		
Self-esteem			.00		
Parent-Child relationship (PCR)			-.02		
Peer-relationship			.01		
Teacher-Child relationship (TCR)			.04		

Note. *p < .05. **p < .01. ***p < .001.

Distraction coping strategy. As can be seen in Block 1 (Table 21), sex was significantly associated with the use of distraction coping, indicating that female participants were less likely to use distraction coping strategy compared to male participants (β = -.22, p<.001; R^2 =.05, ΔR^2

=.05, p<. 001). As can be seen in Block 2, general assertiveness was significantly related to the use of distraction coping strategies (β =.35, p<.001; R^2 =.17, ΔR^2 =.12, p < .001), indicating that the higher the reported level of assertiveness, the higher the reported use of distraction coping. In Block 3, the only significant external social variable was peer relationships, with more positive relationships with peers being associated with greater reported use of distraction coping (β =.12, p<.01; R^2 =.19, ΔR^2 =.02, p <. 01). Interactions were entered into the fourth model (Block 4) with grade and sex, by general assertiveness and teacher-child relationship found to be significant (β = -.19, p<.05; β = -.30, p <.05 respectively; R^2 =.20, ΔR^2 =.01, p <. 05). As presented in Figure 4, older male adolescents were less likely to use distraction coping compared to female adolescents. Also, as can be seen in Figure 5, for high assertive adolescents, the use of distraction coping decreased with the reports of more positive teacher-child relationships.

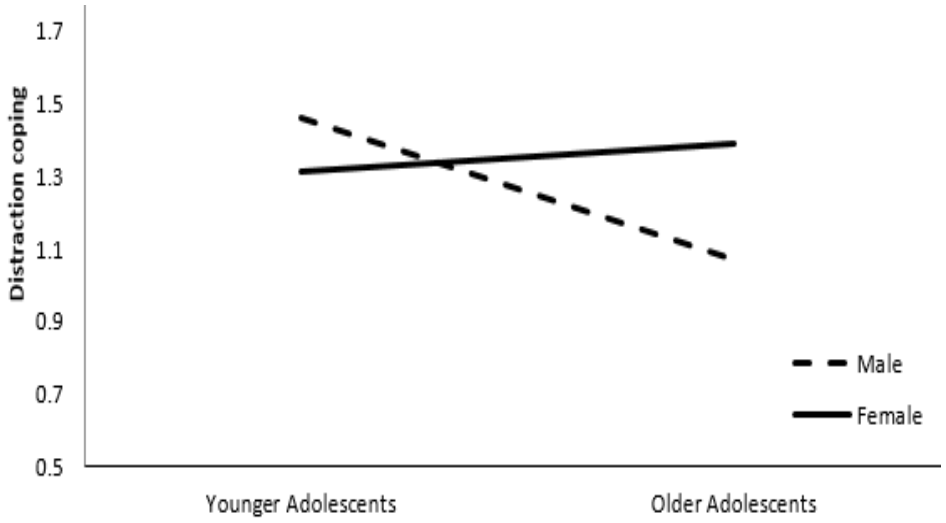

Figure 4. Distraction coping as a function of grade and sex

Table 21. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Social Variables, and Distraction Coping*

DV = Distraction Coping (DC)	*β Block 1*	*β Block 2*	*β Block 3*	*β Block 4*	R^2	$\triangle R^2$
Block 1					.05	.05***
Grade	.04					
Female	-.22***					
Block 2					.17	.12***
Grade		-.01				
Female		-.21***				
General social assertiveness (GSA)		.35***				
Self-esteem		-.00				
Block 3					.19	.02**
Grade			-.01			
Female			-.21***			
General social assertiveness (GSA)			.30***			
Self-esteem			-.03			
Parent-Child relationship (PCR)			.00			
Peer-relationship			.12**			
Teacher-Child relationship (TCR)			.03			
Block 4					.20	.01*
Grade				-.05		
Female				-.01		
General social assertiveness (GSA)				.46***		
Self-esteem				-.02		
Parent-Child relationship (PCR)				-.00		
Peer-relationship				.12*		
Teacher-Child relationship (TCR)				.13		
Grade x Female				-.19*		
Grade x TCR				.16		
Female x TCR				-.04		
GSA x TCR				-.30*		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

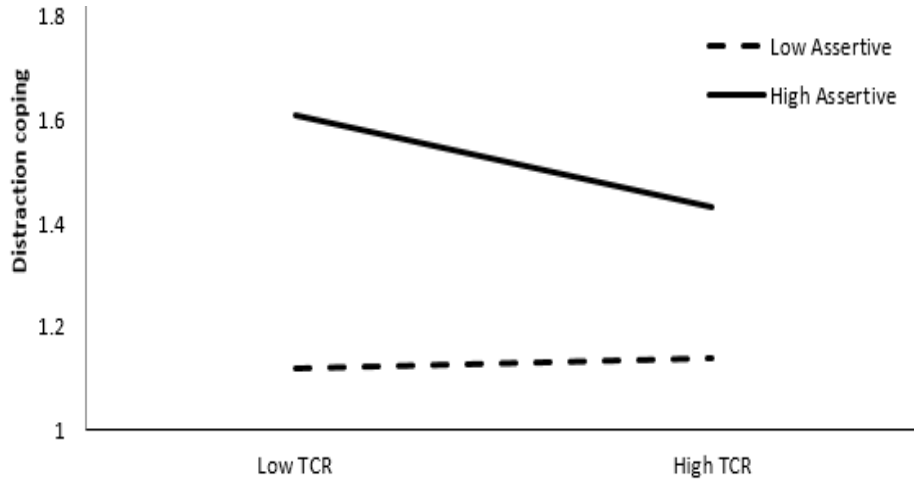

Figure 5. Distraction coping as a function of teacher-child relationship and assertiveness

Retaliation coping strategy. As presented in Table 22, sex and grade were entered in Block 1 and neither was significantly associated with use of retaliation coping. In Block two, as can be seen in Table 22, both self-esteem and general assertiveness emerged as significant (R^2 *=.07,* ΔR^2 *=.06, p <. 001*), with higher self-esteem being linked with lower reported use of retaliation coping (β *= -.25, p<.001*) and greater assertiveness being associated with higher reported use of retaliation coping (β *=.20, p<.001*). When the social factors were entered into Block 3, none of them were significant. Interactions were explored in the fourth model (Block 4) and both grade by sex, and grade by parent-child relationship (β *=.21, p <.05*; β *=.49, p<.01* respectively; R^2 *=.10,* ΔR^2 *=.02, p <. 01*) were found to be significant. As presented in Figure 6, older male adolescents were less likely to report use of retaliation coping relative 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 coping compared with older adolescents who reported less positive parent-child relationships (see Figure 7).

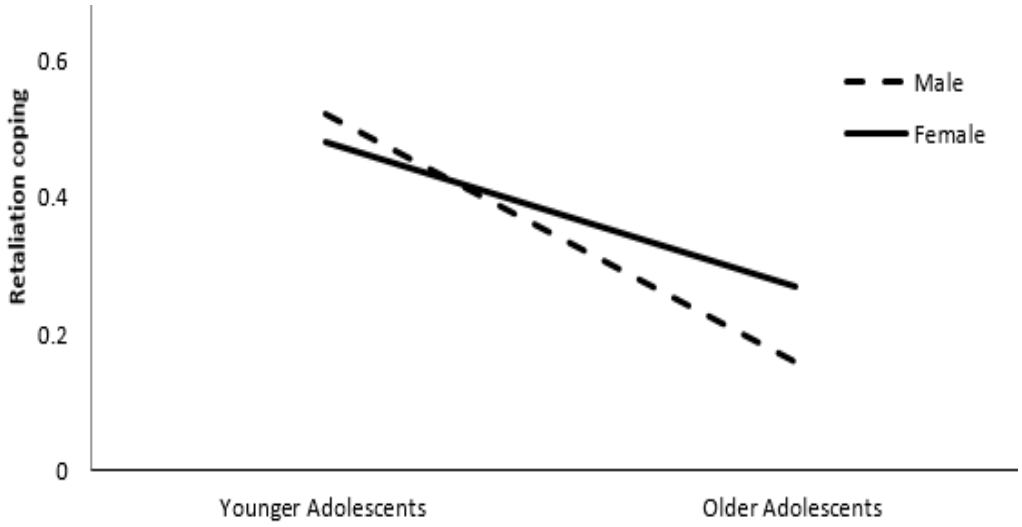

Figure 6. Retaliation coping as a function of grade and sex

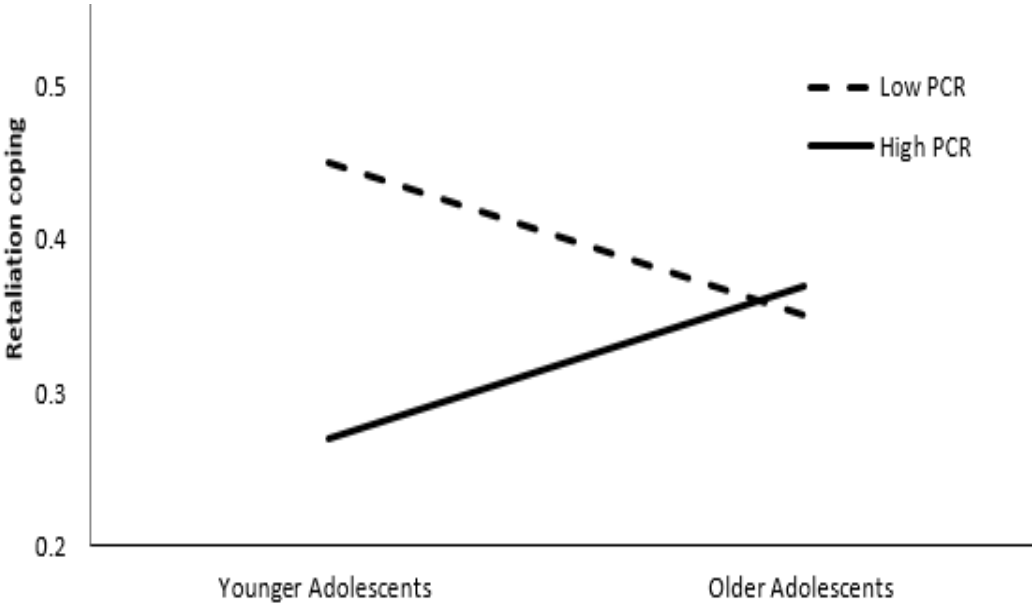

Figure 7. Retaliation coping as a function of grade and parent-child relationship

Table 22. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Parent-Child Relationships, and Retaliation Coping*

DV = Retaliation Coping (RC)	*β Block 1*	*β Block 2*	*β Block 3*	*β Block 4*	R^2	$\triangle R^2$
Block 1					.01	.01
Grade	.05					
Female	-.06					
Block 2					.07	.06***
Grade		.06				
Female		-.06				
General social assertiveness (GSA)		.20***				
Self-esteem		-.25***				
Block 3					.08	.01
Grade			.06			
Female			-.06			
General social assertiveness (GSA)			.22***			
Self-esteem			-.22***			
Parent-Child relationship (PCR)			-.08			
Peer-relationship			.02			
Teacher-Child relationship (TCR)			-.04			
Block 4					.10	.02**
Grade				-.37**		
Female				-.14		
General social assertiveness (GSA)				.38***		
Self-esteem				-.36**		
Parent-Child relationship (PCR)				-.37*		
Peer-relationship				.02		
Teacher-Child relationship (TCR)				-.04		
Grade x Female				.21*		
Grade x PCR				.49**		
Female x PCR				-.10		
GSA x PCR				-.26		
Self-esteem x PCR				.27		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

A separate regression analysis was conducted to explore two-way interactions for teacher-child relationship. As can be seen in Block 4 from Table 23, the only significant

interaction was general assertiveness by teacher-child relationship (β = -.43, $p<.01$; R^2 =.10, ΔR^2 =.02, $p <. 01$). In particular, for highly assertive adolescents, more positive teacher-child relationships were associated with less use of retaliation coping.

Table 23. *Summary of Hierarchical Multiple Regressions Examining the Relationships between Demographic Variables, Individual Characteristics, Teacher-Child Relationships, and Retaliation Coping*

DV = Retaliation Coping (RC)	*β Block 1*	*β Block 2*	*β Block 3*	*β Block 4*	R^2	$\triangle R^2$
Block 1					.01	.01
Grade	.05					
Female	-.06					
Block 2					.07	.06***
Grade		.06				
Female		-.06				
General social assertiveness (GSA)		.20***				
Self-esteem		-.25***				
Block 3					.08	.01
Grade			.06			
Female			-.06			
General social assertiveness (GSA)			.22***			
Self-esteem			-.22***			
Parent-Child relationship (PCR)			-.08			
Peer-relationship			.02			
Teacher-Child relationship (TCR)			-.04			
Block 4					.10	.02*
Grade				-.08		
Female				-.22		
General social assertiveness (GSA)				.44***		
Self-esteem				-.26**		
Parent-Child relationship (PCR)				-.08		
Peer-relationship				.00		
Teacher-Child relationship (TCR)				-.10		
Grade x Female				.20		
Grade x TCR				.12		
Female x TCR				-.02		
GSA x TCR				-.43**		
Self-Esteem x TCR				.10		

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Chapter 5: Discussion

This study examined the prevalence of cyberbullying, cybervictimization and coping among Tanzanian adolescents. In examining the extent of cyberbullying and cybervictimization behaviours among Tanzanian adolescents, a significant percentage of students reported being engaged in at least some form of cyberbullying (42%), with a range of 6% to 20% for any one behaviour that was measured. For cybervictimization, a full (58%) identified themselves as being the recipient of some kind of cyber-aggressive behaviour (with a range of 8% to 40% for any one behaviour). Although these prevalence rates appear to be consistent with the range reported for other work in this area (see: Livingstone & Smith, 2014; Patchin & Hinduja, 2012; Tokunaga, 2010 for reviews), higher reported prevalence rate in this study may be partly due to participants being asked whether they had been cybervictimized or cyberbullied others in their lifetime. Future studies focusing on other reporting time frames (e.g., 2months, 6months, 12months or school year) are recommended. This study provides further evidence that cyberbullying and cybervictimization is a global phenomenon, affecting adolescents in both high income and low income countries such as Tanzanian, which is a region of the world previously lacking in cyberbullying research.

In terms of sex differences, Tanzanian male adolescents more often reported involvement in both cyber perpetration and cybervictimization compared to Tanzanian female adolescents as presented in Table 2. One possible explanation is that Tanzanian male adolescents seem to have more access to cell phones and the Internet than female adolescents who in this study appeared to experience some cultural barriers. Based on the interview data, it appears that some Tanzanian parents think that allowing teenage girls to use cell phones and social network sites may lead to early involvement in sexual activities which is a risk for teenage pregnancy and sexually

transmitted diseases such as HIV-AIDS which is a concern in Tanzanian schools. For example, in describing cultural barriers towards accessing cell phones, one female student said, "My parent denied me from owning a cell phone and joining social media saying it is immoral and will mess up my behaviour…engaging in early sexual activities." Another female adolescent said, "My brother banned me from using a mobile phone, but I continued using it in secret. When he realized that I am still using the mobile phone, he really beat me up and confiscated the phone." Although restricting adolescents' use and access to mobile phone and Internet may decrease involvement in cyberbullying and cybervictimization, harsh punishments like beating and banning a child from accessing and using mobile phones and Internet may be less beneficial in efforts to address cyberbullying behaviours. Mobile phones and Internet has become an integral part of adolescents' life and in other countries and cultures, beating a child for using these technologies would be considered as aggression and problematic, perhaps "bullying."

Given the importance of these technologies in education and making and maintaining social connections in the modern digital world, both male and female adolescents need these technologies. When access and use is denied by parents/guardians, some of the adolescents would find ways to continue using these technologies in secrete without parental knowledge increasing risks for cyberbullying and cybervictimization. Therefore, given that adolescents may face risks when technologies are improperly used, it is important to provide both female and male adolescents not only with equal access to technology but to be educated on how to use technology responsibly. It is also important to point out that education about cyberbullying and cybervictimization would not be helpful without addressing cultural norms and barriers around access and use of technology, especially for Tanzanian female adolescents.

Consistent with previous research showing a relationship between access to digital devices and increase in cyberbullying behaviours (Sticca, Ruggieri, Alsaker, & Perren, 2013), higher use and access to technology was found to increase Tanzanian adolescent males' risk of being involved in cyberbullying behaviours. These results are compatible with previous research in North America (e.g., Bauman, 2012; Holfeld & Grabe, 2012), and Europe (Salmivalli & Poyhonen, 2012) which found male adolescents to be more likely to be involved in cyber perpetration. However, other studies from the U.S. have found that female students were more frequently targeted and involved in cyber perpetration than male students (Kowalski & Limber, 2013). Though future nation-wide research is needed for a broader and better understanding on the role of sex, gender stereotypes, and cultural factors in cyberbullying behaviours in Tanzania, this phenomenon is a growing issue among both male and female Tanzanian adolescents that needs addressing.

Predictors of Cyberbullying. In examining the relationship between socio-demographic factors, technological access variables, and cyberbullying among Tanzanian adolescents, results that older adolescents who spent more time online were more likely to engage in cyberbullying compared with younger adolescents are congruent with previous studies which found an association between higher access to electronic devices, such as mobile phones and Internet, and spending more time online and greater likelihood of engagement in cyberbullying behaviour (Holfeld & Grabe, 2012; Kowalski et al., 2014; Mishna et al., 2012; Shapka & Law, 2013; Tsitsika et al., 2015). Findings also corroborate other works from other contexts arguing that cyberbullying increases as students' progress into higher grade levels (Almeida et al., 212; Kowalski et al., 2014; Tsitsika et al., 2015). Although these results differ from previous research that demonstrated no association between age and cyberbullying (Beran & Li, 2007; Patchin &

Hinduja, 2006; Smith et al., 2008), and those which reported that cyberbullying declines with grade level (Slonje & Smith, 2008; Williams & Guerra, 2007), these results further support the effect of age and technological access variables in studying cyberbullying experiences across contexts and provides important information for early on education and intervention programs.

Results that Tanzanian adolescents, especially male students, who spent more time online were more likely to engage in cyber perpetration are in line with other previous work arguing for greater cyber perpetration rate among male students (Cross et al., 2012; Gradinger et al., 2012), and corroborates other studies which argued that adolescent male students tend to engage in a wide-range of activities online including online gaming, which has been linked with the increased likelihood to participate in cyber perpetration acts (Tippett & Kwak, 2012). As noted earlier, Tanzanian male adolescents are more likely to have higher access and heavy use of digital devices (see Table 2), which could possibly increase their online interactions and likelihood of offending others online relative to female adolescents. In fact, having access to digital media devices is not a bad thing in the contemporary technological world. An adolescent may feel left behind if she/he does not keep up with technology. Therefore, early education targeting digital devices use and developing cell phone and Internet rules and principles in a positive and caring relationship that promotes child disclosure is important. Further experimental and longitudinal studies are needed to understand motivations, for being online and engagement in cyberbullying behaviours, and the long term impacts of early education and rules on digital devices.

Although sharing cell phones or handsets may be a common practice among adolescents in developing countries because of affordability, this study found that those who reported sharing a cell phone were at greater risk for involvement in cyber perpetration. The more the Tanzanian

adolescents shared cell phones or handsets with others including peers, the greater likelihood of those adolescents to have engaged in cyber perpetration. For example, a 15-year-old female student reported that, "Whenever he sent abusive texts, we replied back in the same way by sending more painful insults." One possible explanation is that some of the students use other friends', peers' or siblings' devices to inflict pain on others. In fact, sharing cell phones can make it harder for the victim to reach the perpetrator because the owner of the cell phone may deny any involvement when confronted by the victim or authorities (Bauman, 2012). Of serious concern is that the victim may decide to seek revenge by insulting the cell phone owner who may also react, making the situation more troublesome. This counter-retaliation where a victim engages in revenge as a coping strategy can perpetuate the bullying cycle as it was evidenced in one interview with a 15-year-old female student, "We also threatened him to know that we are also arrogant. We all took turn in abusing back. Sometimes my sister would do it and sometimes I would respond back." Findings from this study indicate that cell phone sharing is a risk factor for cyberbullying behaviours that needs to be considered in efforts to promote digital literacy, helping adolescents to understand that when someone borrows your cell phone or handset and cyberbullies others, you could be held responsible. Given that Tanzania is a collectivistic society where sharing seems to be a common practice, future studies are needed to better understand the sharing of technology among adolescents and its associated impacts.

For cybervictimization, similar to cyberbullying, access to technology related variables, especially time spent online and using cell phones or the internet in a private location were associated with higher reported online victimization. These results are supported by previous work (Tsitsika et al., 2015; Shapka & Law, 2013; Law et al., 2010) which found a positive association between time online, using devices in a private location, and cybervictimization.

Efforts to educate adolescents about appropriate use of technology while in private locations (e.g., bedroom) are important. Findings may also be useful in informing the arrangement of school computer labs and public spaces where there is greater access to technology among adolescents (e.g., Internet cafes, libraries, etc.) such that appropriate use of technology is maintained. Although the use of digital devices in a private location has been long identified as a risk factor for engaging in cyberbullying behaviours (Law et al., 2010), one concern is that advancements to more portable and small devices mean that a person can create screen privacy even in public spaces. It is possible that, for Tanzanian adolescents, who are more likely to share handsets, privacy is still relevant. Future work should examine this issue further.

Negative Consequences of Cyberbullying. Like their counterparts in other contexts where cyberbullying has been researched, Tanzanian adolescent victims of cyberbullying reported experiencing negative emotional, social, cognitive, behavioural, and academic impacts, respectively, as a result of online victimization. For example, in describing how he was affected by cyberbullying, a 17-year-old male student said, "Sometimes you may think of committing suicide but I know this is not good before God." Other studies with adolescents in developed countries have also linked online victimization with feelings of anxiety, depression, frustration, anger, and sadness (Campbell, Spears, Slee, Butler, & Kift, 2012; Kowalski & Limber, 2013; Tippett & Kwak, 2012), as well as suicidal ideations (Bonanno & Hymel, 2013), and in extreme cases, suicide (Li, 2006; Patchin & Hinduja, 2010; Patchin & Hinduja, 2006). Findings replicate other works in both North America (Holfeld & Grabe, 2012) and Europe (Sourander et al., 2010) which found links between cybervictimization and social relational problems with peers and adults. For example, when one 16-year-old female student told of her exclusion from her peers and friends, she was told online that, "We won't invite you to our parties or functions because

you are boring." Students also reported experiencing negative academic outcomes as a result of cybervictimization as described by a 16-year-old female student, "First of all, it affected my performance in academics. No matter how hard I try to study, I just feel like a failure! I can't concentrate on my studies anymore." Negative academic outcomes have been documented in North America (Beran & Li, 2007; Holfeld & Grabe, 2012; Kowalski & Limber, 2013) and in Europe (Tsitsika et al., 2015) revealing significant positive associations between online victimization and school-related problems including poor performance, low concentration, and absence from school. Given that adolescents may be victimized both online and offline (Kowalski et al., 2014) and that victims in both settings tend to display similar negative outcomes (Sticca & Perren, 2013), further research is needed with Tanzanian adolescents to understand if online victims are also victimized offline.

Based on the findings from this study as well as previous research, the consequences of cyberbullying may be felt by adolescents across various social contexts (e.g., family, school, and church). As such, various holistic efforts involving individuals, family, school, community members, researchers, non-governmental organizations, and government are important. In efforts to address the cyberbullying problem, the government of the United Republic of Tanzania has recently passed legislation criminalizing cybercrimes (Cybercrime-Act of 2015). This Act states that,

> A person shall not initiate or send any electronic communication using a computer system to another person with intent to coerce, intimidate, harass or cause emotional distress. A person who contravenes subsection (1) commits an offence and is liable on conviction to a fine of not less than three million shillings or to imprisonment for a term of not less than one year or to both" (Section 23, Subsections 1 & 2, pp. 13-14).

Although the government may have good intentions for addressing cyberbullying, legislation alone has been argued to have less impact in preventing cyberbullying (Bauman, 2012). Efforts that bring researchers and practitioners together, and having empirically-informed legislation that recognizes both traditional school bullying and cyberbullying as behavioural and relationship problems that require strategies and interventions that are age and developmentally appropriate are important. Findings further highlight the importance of joint education and intervention programs that involve young people themselves, their families, schools, the broader community (e.g., religious institutions, businesses, community leaders, and celebrities), as well as utilizing mass media and government institutions. Given that research on cyberbullying in a Tanzanian context is just beginning, there is a need to identify, adapt, and integrate programs and practices in Tanzania that have demonstrated positive results elsewhere including the KiVa program in Finland (see Salmivalli & Poyhonen, 2012) and PREVNet in Canada (see http://www.prevnet.ca/).

Coping with Cyberbullying

Individual and Social Factors Influencing Coping with Cyberbullying in a Tanzanian context

Although this work found some consistency for the prevalence and in the socio-demographic factors that predict cyberbullying and cybervictimization, in looking at coping strategies, there were interesting patterns that were unique to a Tanzanian context. For instance, in this study, older adolescents who had strong relationships with their parents were more likely to adopt retaliation coping strategies in response to cyberbullying. Given the fact that positive parent-child relationships are usually linked with positive developmental and behavioural outcomes (Birkeland et al., 2014; Holden et al, 2011), the finding was surprising. However,

within a Tanzanian context, where standing up for oneself is strongly endorsed, this is likely a positive reflection of family values. In particular, it is possible that some of the Tanzanian children are backed up by family members or parents when they retaliate. This finding is in line with Frey, Pearson, and Cohen (2015) who has 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 offense might be ostracized" (Frey et al., 2015, p.27). Although retaliation may be considered differently across cultures, future studies are needed to understand more about retaliation and parenting in a Tanzanian cultural context.

Given that different cultures may respond differently to retaliation (Frey et al., 2015), school as a context made up of a constellation of varied cultures may also influence students' values about retaliation in different ways. In particular, through school norms, rules, and bidirectional teacher-student interactions, teachers tend to model or influence students' behaviours in multiple ways (Hinduja & Patchin, 2013). As presented in the finding below, the educational context may provide a different value on retaliation coping than parents.

Interestingly, it was revealed that highly assertive Tanzanian adolescents with positive relationships with their teachers were less likely to utilize retaliation and distraction copings. One possibility is that teachers may directly or indirectly promote other coping strategies such as active coping and social support coping compared to retaliation and distraction coping strategies. This coincides with previous work that through reciprocal teacher-student interactions, teachers have the ability to both directly and indirectly influence student choices and decisions (Hinduja & Patchin, 2013) and to enhance students' competencies to interpret and respond to various stressful events in life such as 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 and life satisfaction (Owen & Bub, 2011). This further supports the notion that Tanzanian adolescents, who are assertive and feel connected and supported by their teachers, are more likely to use other adaptive coping strategies compared to retaliation and distraction strategies. Another possible reason is that individuals who are assertive have been reported to have a tendency to defend themselves confidently in various challenging social situations (Ma & Jaeger, 2010; Onuoha & Munakata, 2005; Wills, Baker, & Botvin, 1989), and are more likely to receive social support with various challenging problems than their counterparts who are less assertive (Eskin, 2003). Although quality parent-child, and teacher-child relationships are recommended for positive developmental and behavioural outcomes, future studies are needed to further understand differences between parents' and teachers' values and messages about retaliation coping.

Findings that older adolescents who scored high on assertiveness were more likely to use avoidance in responding to cyberbullying was also somewhat surprising. One possibility is that some of the older adolescents and those who were assertive may have decided to employ avoidance as a way to avoid peer rejection and getting into conflict with peers and with authorities in case the problem could not be resolved. It is also possible that some of the older adolescents and those who were assertive resorted to avoidance due to the multifaceted nature of the cyberbullying behaviour, especially in situations where the adolescent was being cyberbullied by a stranger or multiple individuals in different platforms. For example, when describing how she responded to cybervictimization, a 16-year-old female student said that, "Replying back when it pisses me off. But if it doesn't I just ignore the person. Or I do block them." These observations fit with the work of Lazarus and Folkman (1984) and Olafssen and Johansdottir (2004) which showed that, depending on the appraisal of the problem situation,

individuals may initially begin with active coping strategies such as engaging the perpetrator in a discussion to resolve the problem, and change to passive strategies such as avoidance depending on the situation. Findings further suggest that not all problem situations will demand that an adolescent respond assertively. This is an important element when developing assertive skills training programs which has been a key feature to SAFETEEN program located in Canada (Roberts, 2001). It may be that teenagers require multiple sets of competencies as part of their social skills tool box, especially when it comes to dealing with cyberbullying.

Contrary to previous findings in the UK (Smith et al., 2008), in Australia (Spears, Taddeo, Daly, Stretton, Karklins, 2015), and in a review by Tokunaga (2010) that adolescents are more reluctant to seek help with cyberbullying, in this study, both male and female adolescents were more likely to seek social support for cyberbullying as they get older. One explanation could be that adolescents from high income countries have been exposed to digital devices from much younger ages compared with adolescents from Tanzania. In this regard, when it comes to digital devices access and use, Tanzanian adolescents are less experienced than their counterpart adolescents from high income countries who are more experienced. Hence, for Tanzanian adolescents, this increased tendency to adopt social support coping might simply be an artifact of the age of access and exposure to digital devices cyberbullying. Another possible explanation is that adult-child relationships differ across cultures (Shapka & Law, 2013). Perhaps Tanzanian parents trust their children more and have more positive relationships that enhance child self-disclosure during challenging situations. Another possible explanation is that Tanzania is more of a collectivist culture in which collaboration and support are more expected in relationships.

It is possible that because of the digital divide that exists between parents and their children (Aoyama et al., 2012; Smith et al., 2008), adults who may be less technologically savvy than adolescents may find that there is greater mutual support whereby children are able to provide knowledge and expertise with technology which further enhances parent-child relationships. For example, in describing a digital divide between adolescents and parents, a 14-year-old male adolescent said, "It is like this...I know a lot about phones and I used to help my mum in fixing or repairing her smart phone whenever it had problems. After noticing it is bothering her, she decided to buy a new phone and gave me the old one." Future studies examining how technology shapes parent-adolescent relationships in the context of child-provided support of technology to their parents are important.

In addition to the key findings identified above, as expected, a significant positive association was found between assertiveness and active coping, that high assertive adolescents were reporting the use of more active coping strategies, which have been generally found to be more effective (Jacobs et al., 2015; Machackova et al., 2013). This finding was not surprising given the evidence that older adolescents are more likely to be assertive than younger adolescents (Eskin, 2003), and that individuals who are assertive have been reported to have a tendency to defend themselves confidently in various challenging social situations (Duckworth & Mercer, 2006; Ma & Jaeger, 2010; Onuoha & Munakata, 2005; Wills, Baker, & Botvin, 1989). Given this relationship, educational efforts to teach students how to be assertive, as opposed to aggressive or submissive, in their responses to challenges may be worthwhile. Promising in this regard is the SAFETEEN Program (Roberts, 2001) that empowers both female and male adolescents with simple effective 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. Initial empirical evaluation results for this program were promising, at least for girls who reported increase in sense of efficacy in addressing challenging social and dating situations (Hymel, Chipman, Onditi, & Starosta, 2016). Although there are some promising results from assertive training programs such as SAFETEEN, most of the programs and the reviewed studies on assertiveness are based on offline interactions. Given the uniqueness of online context, findings highlight the importance of future studies and training programs targeting online assertiveness.

This study, as expected, revealed a negative association between self-esteem and retaliation coping, with adolescents with high levels of self-esteem reporting less use of retaliation coping in response to cyberbullying. One possible explanation which is consistent with previous studies is that adolescents who reported high levels of self-esteem have a greater tendency to use adaptive coping strategies such as active and support seeking coping (Chapman & Mullis,1999; Dolenc, 2015; Mota & Matos, 2014) and lower reported tendencies to use avoidance and venting coping strategies in response to stressful situations (Lam et al., 2014). The reported positive association between assertiveness and self-esteem ($r = .33$, $p < .01$, two-tailed) supports the notion that adolescents who have high self-esteem are more likely confident and capable to stand up for themselves in various challenging social situations using 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. Although findings provide useful information to help youth develop self-esteem from an early age, in a conversation with Shelley Hymel (December 12, 2016), major educational efforts to enhance children's self-esteem were a dismal failure in the 1960s in the US. The programs tried to increase self-esteem of children by merely telling them how great they were

and it did not work. Self-esteem has to be earned based on the performance in other self-concept domains, not just expected to increase based on statements. Although this is an area that requires further research, findings highlight the importance of helping youths find areas in which they are competent and promoting those specific competencies in a supportive and caring way (e.g., giving constructive feedback). In addition, given that there was a positive association between assertiveness and self-esteem, promising efforts such as SAFETEEN programs which provide youth with assertive strategies may be important in enhancing essential competencies for developing self-esteem.

As expected, this study revealed a significant positive association between teacher-child relationships and the use of active coping strategies for cyberbullying. Given that a more positive teacher-student relationship was linked with lower reported use of retaliation coping, and greater use of active coping strategies suggests that Tanzanian teachers may be promoting adaptive coping strategies such as active and social support seeking strategies and discouraging the less adaptive ones such as retaliation. Studies have shown that students who feel both physically and psychologically cared for and supported by adults including teachers appear to be socially and emotionally well-regulated (Holden et al., 2011; Owen & Bub, 2011), and this might have, in turn, enhanced students' confidence and courage to react actively to cyberbullying.

Another possible explanation which is consistent with previous work is that feelings of being cared for or supported by teachers can contribute to enhancing students' social competencies and confidence to respond actively to various challenging social situations such as cyberbullying (Owen & Bub, 2011). Positive teacher-student relationships may be especially important for vulnerable youth, such as students living with HIV-AIDS, orphans, and those from low social economic backgrounds (Darwich, Hymel, & Waterhouse, 2012). Positive teacher-

student relationships may also be important in mediating teacher-parent relationships, which may have positive impacts on students' school-related outcomes.

Moreover, healthy teacher-student relationships have been associated with a decrease in cyberbullying in the U.S. (Hinduja & Patchin, 2013). In order to provide adequate support to students on cyberbullying-related issues, findings highlight the importance of providing teachers with relevant education on cyberbullying and various adaptive coping strategies (e.g., blocking perpetrators, enhancing online privacy, saving evidence, and reporting cyberbullying to service providers). Despite the impactful role that positive teacher-student relationships have towards buffering negative effects of cyberbullying on children, this study nor previous research have yet to illuminate the causal relationships or impacts on coping with cyberbullying over time, which warrants future study.

Coping by Victims of Cyberbullying. Another unique and important aim of this study was to examine how Tanzanian adolescent victims of cyberbullying coped and why particular coping strategies were perceived to be effective. It appears that not all coping strategies can be effective because different situations would require different strategies and thus all strategies could be viewed as "most effective" depending on the situational, individual and contextual factors. Basically, in this study, adolescents used all five different coping strategies including active, avoidance, social support seeking, distraction, and retaliation coping, and each teenager reported thinking their selected strategy/strategies works. This is in line with previous findings from cyberbullying research on adolescents in the Czech Republic (Machackova et al., 2013) and traditional bullying in Canada (Craig, Pepler, & Blais, 2007) which found children and youth, when dealing with bullying, employ different coping strategies that are dependent on their own situations. This suggests that there are multiple ways to address social problems. In particular,

this study found that there appears to be no one stand-alone solution to coping with cyberbullying. What this also suggests is a need to adopt and adapt some promising social problem solving programs developed in the US within a Tanzanian context including: (1) the *Promoting Alternative Thinking Strategies* (PATHS) which promotes emotional competencies, self-control, positive peer relationships and problem solving skills (Domitrovich, Cortes, & Greenberg, 2007; Greenberg, Kusche, Cook, & Quamma,1995); (2) the *Second Step* program which promotes violence prevention competencies such anger management skills, empathy, and impulse control (Frey, Hirschstein, & Guzzo, 2000); and, (3) the *I Can Problem Solve* (ICPS) which trains children in developing multiple solutions to challenging interpersonal problems and to reflect up on the solutions and potential consequences of the selected solution (Shure, 1994).

With the exception of social support coping which was reported to be mostly ineffective as indicated by quantitative results, the other four coping strategies were considered useful for victims of cyberbullying according to the quantitative data. However, qualitative results indicated that social support coping was one of the effective strategies. A possible explanation for the discrepancy in the quantitative and qualitative results on social support coping could be that participants interviewed may have evaluated their situation as severe and uncontrollable and needed some forms of social support. In contrast to the larger sample of participants in the quantitative data set may have experienced lower incidences of cyberbullying that they perceived as more controllable and therefore selected strategies other than seeking help from others. Moreover, it may be that the majority of children are generally reluctant to seek help from adults due to the fear of not getting help or being deprived from using technology as it has been reported in previous studies (Smith et al., 2008; Tokunaga, 2010). When asked why she decided not to tell parents about the cyberbullying problem, a 15-year-old female student responded by

saying, “We also feared that parents will confiscate our phone or will stop us from using phone. Sincerely, we mainly feared losing our phone.” Another slight discrepancy was found in the data between the lower reported frequency in the perceived effectiveness of retaliation coping in the qualitative data but more favorable perceptions on its effectiveness in the quantitative results. One possible explanation is that participants may be less willing to admit to retaliation behaviour in face-to-face interviews, but are more willing to self-report selecting this strategy in a questionnaire given that there is greater privacy. Another possible explanation is that interview participants may have had severe cybervictimization experiences and feared that using retaliation would worsen the situation in contrast to those participants who only completed the questionnaire. Although explanations on the discrepancies are speculative and suggest a need for future studies, both qualitative and quantitative data provided useful information for understanding the dynamics in coping strategies.

In this study, it was qualitative data which unveiled the reasons why every teenager thinks their chosen strategy works. For active coping, victims pointed out that it helped them in holding the perpetrator(s) accountable to feel responsible for his/her inappropriate online actions, and made themselves inaccessible for further humiliation by the perpetrators (e.g., “all those people I have blocked do not bother me anymore! So it helps me.” Female student, age 16). In line with Lazarus and Folkman’s (1984) coping model, it appears that some Tanzanian adolescent victims in this study initially perceived cyberbullying as a behaviour that can be changed, and hence, they resorted to using active strategies such as taking technical precautions and confronting or talking to the perpetrators to reduce or stop the cyberbullying. Although talking to the perpetrator may sometimes provide satisfaction to the perpetrator (Machmutow et al., 2012), by engaging the cyberbully in a discussion, both the cyberbully and the victim are

given the opportunity to resolve the situation by finding a solution to the problem instead of escalating the situation. This was evident in an interview with an 18-year-old male adolescent who said that, "When I confronted him, he was able to stop." This corroborates previous studies concerning traditional bullying (Tenenbaum et al., 2011; Wilton et al., 2000) which have found that when students engage in discussions with bullies, problems can be resolved. By talking with the bully assertively, the victim can provide a clear message to the perpetrator that the behaviour is unacceptable.

Given that not all victims of cyberbullying will have the confidence and skills to confront their perpetrators to rectify the situation, and that there will be times when confronting bullies might not be recommended as an appropriate response, some victims can employ other active strategies including blocking the perpetrator and changing cell phone numbers, which were identified in interviews during this study. For example, technological precautions helped buffer one 17-year-old male adolescent from further online humiliation, who said "Changing my phone number. They did not reach me because they did not have my new number." Other studies with adolescents have also reported active technological precautions such as blocking messages, blocking perpetrators, changing personal e-mail addresses, phone numbers, and personal information as ways to cope with cyberbullying (Bauman, 2012; Holfeld & Grabe, 2012; Smith et al., 2008). In examining the effectiveness of taking technological precautions to stop cyberbullying, Machockova and colleagues (2013) found that blocking contacts was more effective in stopping victimization, especially in less severe cyberbullying situations. In general, the findings from this study suggest that Tanzanian adolescents are similar in their use of technological precautions as youth elsewhere. In particular, depending on the situation, individual differences, and contextual factors, youth can engage perpetrators in a discussion on

cyberbullying and use technological options, as well as other active coping strategies in attempts to stop or reduce effects of cyberbullying. This is important for future studies when looking to identify support sources and important social skills essential for successful use of active coping strategy techniques in dealing with cyberbullying.

In contrast, those adolescents who have no cyberbullying experiences may be different from those who have been victimized online. Therefore, studies with hypothetical cyberbullying scenarios that link the use of active coping strategies with higher reported levels of depressive symptoms (Machmutow et al., 2012) are not definitive. Additionally, there may be differences in the selection of coping strategies when adolescents are interviewed individually rather than focus group settings where youth may influence each other (Tenenbaum et al., 2011). More studies are required to better understand the experiences of true victims. Moreover, longitudinal research that investigates cyberbullying effects and coping over time that include more diverse data collection methods (e.g., photovoice, participant-observation, journaling, and real time reporting of experiences and coping strategies used) is needed.

Regarding avoidance and distraction coping strategies, which fall under the emotional-focused coping dimension (Lazarus & Folkman ,1984), three reasons were reported for why the two strategies were considered effective by victims. Recall from the results section, victims reported that avoidance and distraction copings provided relief from stress, time to forget and refocus, and made them inaccessible (avoidance) for further victimization. In describing how avoidance provided relief from stress, a 16-year-old female adolescent said, “You just ignore or let it go because God knows! Let me just forgive. Therefore, my anger slowly disappeared and had to continue with life.” Similarly, in describing how distraction coping afforded relief from stress, another 16-year-old female student explained, “When I get irritated I just watch a soccer

game or go to the field to play soccer with my friends. This makes me feel happy and somehow forget about the stressful problem." This is consistent with findings by Parris (2012) that victims reported implementing avoidance and distraction coping strategies as a means to circumvent emotional effects associated with cyberbullying, and with recent findings in traditional bullying that children who suppressed their emotions reported a decrease in the likelihood of peer victimization (Low, 2015). Previous research has shown greater probability for cyberbullies to lose motivation to continue with their bullying behaviour if they are ignored by victims (Machmutow et al., 2012). In describing how ignoring can reduce the attention and bullying among cyber perpetrators, a 15-year-old female student said that, "He would send tons of weird messages and we would neither read them nor respond back. Eventually, he stopped from sending messages." By not giving the perpetrators the reaction they seek, avoidance as a coping strategy can transition into an adaptive coping strategy (Parris, 2012). It is possible that a strategy that may seem less effective in one context may work in another context.

In addition, victims further reported that avoidance coping (e.g., leaving social network site and stop using phone) made them inaccessible for further victimization. In describing how avoidance buffered victims from further victimization, a 16-year-old male student said, "I think leaving Facebook. It is helpful because you are no longer bothered by people. You become free!" It seemed that leaving social media, changing one's phone number, or stopping phone use may make the victim inaccessible for direct victimization. However, the reach of the digital world and the extent of harassment may lead to continued victimization in other platforms where victims have less control. This appeared to be the case for a 15-year-old male student who said, "I feel there is no any one effective strategy. You simply do it to reduce stress. For example, staying

away from Facebook will not stop the perpetrators from continuing posting or commenting you badly online."

Another reason reported by victims included the use of both avoidance and distraction coping strategies which helped some victims to forget and refocus on other important things. For example, a 15-year-old male adolescent said, "After ignoring them, you get time to concentrate in your studies because you do not think much about social media." Another interview participant explained, "Playing games make you forget about the bad experiences that happened to you...games involve a lot of thinking, this helps in clearing bad feeling and thoughts from your mind." Although there appears to be some similarity between Tanzanian youth and youth elsewhere in their use of avoidance and distraction coping, this study has identified multiple "indices" on the perceived effectiveness of avoidance and distraction coping strategies (e.g., helped victims to forget and to refocus, get relief from stress, and not accessible for further victimization) which need to be further explored in future studies. In particular, future studies should not only focus on multiple coping strategies but should also consider multiple indices within a particular coping strategy.

Although cyberbullying victims in the present study have reported that avoidance and distraction coping strategies were useful, it is unclear whether the identified benefits are sustainable, or provide a buffer from the negative outcomes of cyberbullying victimization over time. In a review on cyberbullying, Tokunaga (2010) identified that avoidance coping can be effective in less severe situations. Another finding by Konish and Hymel (2005) revealed that high distraction coping is effective in reducing the level of bullying under low levels of stress, but appears to be less effective under higher levels of stress. These findings are mainly correlational, hence, not definitive in understanding avoidance and distraction coping strategies

and stress levels which may vary between individuals, and across contexts and time. Further evidence from observational (Wilton et al., 2000) and focus group interview (Tenenbaum et al., 2011) studies on traditional bullying have shown that the use of avoidance and other emotional-focused copings strategies are generally ineffective and can only provide short-term and not a permanent solution to the bullying problem. These correlational and focus group studies are inconclusive in determining short-term and long-term outcomes. In fact, for some children, it is unknown which strategies may have more long-term positive outcomes and those which only provide temporary relief, especially in the virtual world. Given that cyberbullying has been identified as a unique form of bullying (Law et al., 2012b; Bonanno & Hymel, 2013), findings suggest a need for longitudinal studies with cybervictims on the efficacy of avoidance, distraction and other copings and the related indices between individuals over time.

In terms of retaliation coping, victims consistently reported that it helped in holding the perpetrators accountable. In describing retaliation coping and its effectiveness, a 17-year-old female student said, "In short, when she sent me intimidating text messages, I also responded back with the same intimidating text messages." This led the perpetrator to ask her whether they "should stop the fight…" and whether this "was all…childish[ness]"… This taught her a lesson and made her stop her behaviour" and they "can now call each other and talk friendly." Similarly, another 16-year-old male student who used retaliation coping said, "You just revenge to make the person know that you're also capable of fighting him online. Just make the person also feel the pain!" It could be that for some perpetrators, retaliation coping led them to feel the negative effects of their behaviour and they decided to end their cyberbullying behaviours. Another possible explanation is that the anonymity and lack of physical contact and emotional cues in digital communication (Holfeld & Grabe, 2012; Kowalski et al., 2014; Slonje & Smith,

2008) can lead to misunderstandings misinterpreting online posting of information. For instance, a perpetrator may stop their behaviour only after having learned that what they posted online may have been interpreted as inappropriate after receiving retaliatory feedback from the victim. Although other studies with children and adolescents on cyberbullying (Holfeld & Grabe, 2012; Smith et al., 2008) have also reported the use of retaliation coping in response to cyberbullying, unlike the present study which used interviews to tap victims' experiences, perceived outcomes of retaliation for real victims of cyberbullying have been missing in these correlational studies. Frey et al. (2015) argued for an appreciation of the complexity of retaliation coping in that it differs across individuals and cultures. For instance, according to Frey and her colleagues, adolescents who can regulate and control their aggression, and those who can make careful plans in terms of when, where, and how to react are more likely to benefit from retaliation coping compared to peers who are more dysregulated. This suggests that adolescents who lack skills to regulate themselves and plan for constructive retaliation, retaliation coping strategies may escalate bullying problem as the victim can then become both a perpetrator and victim (bully-victim), a group that is of heightened concern in a cyber context (Espelage et al., 2013). The complexity of retaliation coping was also revealed in in the interview data. For example, a 15-year-old female adolescent described, "It did not help much, because whenever you retaliated he would also get back harshly with even more hurtful text messages." In this regard, social problem solving programs such as Second Step (Frey et al., 2000) which promotes empathy, impulse control and anger management are worth adapting and integrating into a Tanzanian context.

In general, it is unclear whether victims of traditional bullying in a focus group interview study in the U.S. (Tenenbaum et al., 2011) and the cyberbullying victims in the present study

who succeeded in addressing bullying by retaliating had the ability to engage in constructive retaliation as pointed by Frey and colleagues or were just conforming to the cultural or parental expectations to retaliate, especially for Tanzanian adolescents. Future cross-cultural research with victims of cyberbullying is needed to examine individual characteristics such as self-regulation as well as the role of cultural variables on retaliation coping over time. Without this body of knowledge and information, findings from previous work with hypothetical cybervictims that linked higher reported levels of retaliation with higher reported level of depressive symptoms (Machmutow et al., 2012) remain inconclusive.

5.1 Summary and Implications

Overall, the results of this study addressed the key research questions in various ways. In particular, this study provides further evidence demonstrating that cyberbullying is a problem among adolescents in both developed and developing countries. Although both male and female students reported to have experienced cyberbullying and cybervictimization at least once in their life, Tanzanian male adolescents reported higher frequency rates of cyberbullying behaviours. Like their counterparts in other developed countries, Tanzanian adolescent victims reported experiencing negative emotional, social, cognitive, behavioural, and academic outcomes as a result of online victimization. This calls for education and awareness programs.

With an exception of sharing cell phones or handsets which appears to be a unique risk factor in Tanzania, other technology variables related to cyberbullying behaviours reported in this study (e.g., more time online and using phone in a private location) mirror previous results from other high-income countries (Holfeld & Grabe, 2012; Kowalski et al., 2014; Shapka & Law, 2013; Tsitsika et al., 2015). Although moderating children's time online, providing education as to the appropriate use of digital devices in private settings, and education on online

privacy are highly recommended in these studies, there is still a need for experimental and longitudinal studies to better understand causal relationships and the long-term effects of these recommendations. Moreover, efforts that improve parent-child relationships, which may in turn enhance children's self-disclosure of being cybervictimized (Shapka & Law, 2013) are important areas for future study.

In terms of coping strategies used by victims, consistent with the reviewed coping models (Lazarus & Folkman, 1984), and recent work on coping with cyberbullying (Machackova et al., 2013), findings suggest that, in general, victims were more likely to employ multiple coping strategies in response to cyberbullying possibly due to the way they evaluate the situation (controllable or uncontrollable) and their ability and the availability of resources to address the incidence. Overall, coping with cyberbullying is a complex phenomenon largely due to the nature and complexity of the cyberbullying behaviour. There may be no universal single coping strategy that is effective in dealing with cyberbullying. Findings reported in the present study suggest that youth focus on different aspects of effectiveness, including but not limited to stopping the bullying. Perhaps this is a problem with studies to date with regards to effectiveness, as each coping strategy appears to have multiple indices or outcomes. This is relevant information for helping children and adolescents understand that there are many different possible ways to address interpersonal social problems depending on the situation, context, and individual characteristics. Further investigation using longitudinal studies is warranted to understand the long-term effects of the coping strategies and their actual effectiveness in addressing cyberbullying and its associated negative outcomes in the short and long term.

In this study, grade level, which for the most part reflected age of participants, appeared to have a significant impact on the selection of coping strategies among Tanzanian adolescents, as did the unique cultural sense in which retaliation is endorsed as a response to aggression. Although these findings provide some useful information for early and ongoing education across grade levels on multiple ways to deal with challenging problem situations, future research with victims of cyberbullying is needed to determine the long term effect of age/grade level on coping and how parenting or cultural practices influences coping strategies, especially in the virtual world.

The finding that assertive adolescents with strong relationships with their teachers were less likely to use distraction and retaliation coping, and that adolescents who reported greater levels of assertiveness were more likely to use avoidance coping highlights the complex nature of assertiveness in influencing coping in the virtual world. Although this complexity remains an open question for future research, findings indicate that not all problem situations require a child or adolescent to respond assertively. In order to navigate different interpersonal problem situations which varies considerably, it is important to provide training for children in developing multiple solutions to interpersonal problems and to help them understand that there is more than one way to deal with challenging social problem situations. In efforts to train children and adolescents on multiple problem solving strategies, perhaps, they should be taught how to think and not what to think so that they can find their own ways to solve a typical challenging social problem situation (Shure, 1994).

5.2 Limitations and Strength

In this work, several limitations are worth mentioning. First, apart from an adequate sample size (N = 778), participants included secondary school adolescents from only two urban

regions out of more than 30 provinces in the United Republic of Tanzania. Although results may mirror secondary school adolescents in urban cities, caution should be exercised in generalizing the findings to the entire population of adolescents in the country. Future work should include a larger representative sample from rural, sub-urban, and other urban cities.

Second, cyberbullying and cybervictimization data were skewed in that they are still relatively low incidence events, which is typical for the field. However, this might have weakened or masked some of the results.

Third, all the measures in this study were adapted from a western context. Although the measures seemed to be working in terms of internal consistency and some similarities in results, there were some unique findings to the Tanzanian context such as cell phone sharing, parent-child relationships and retaliation which calls for future efforts to develop culturally-relevant measures for an African context.

Being a cross-sectional study, cause-effect relationships can only be speculated and not confirmed. This indicates a need for experimental studies to determine causal relationships, but how these studies may be executed remain to be an open question for the researchers. There is also a need for longitudinal studies which are more robust in terms of sequential influences. For example, longitudinal studies would be especially important in evaluating long term effectiveness, especially if the desired outcome is an end to cybervictimization and to determine the effect of grade level or age over time.

Finally, the interview data were transcribed and translated between languages, which meant that there was no opportunity for the interview participants to review and confirm the results of this study. Future studies should consider multiple interview sessions and share the results with participants for feedback to validate qualitative findings.

Despite these identified limitations, this study fills a large void in a Tanzanian context, and is one of the few studies from an African context, which begins to shed light on the prevalence of cyberbullying and cybervictimization among adolescents. Furthermore, the current work is among the few to use a mixed-method design, which provided both participants, lived experiences of cyberbullying, as well as their more general reporting of cyberbullying and coping. Relatedly, the present study is unique in its focus on understanding why victims of cyberbullying considered particular coping strategies to be effective. In particular, unlike other studies that have explored efficacy of coping strategies using the overall sampled participants or with hypothetical cybervictimization scenarios (Machmutow et al., 2012; Parris, 2012), the present study involved interviews with real victims of cyberbullying regarding the effectiveness of particular coping strategies. Given that there were several different outcomes of interest stated by victims interviewed and that no one single coping strategy could work for all individuals in all situations and contexts, there is importance to consider multiple indices of effectiveness in future studies since.

Another strength of this study is that it is among the first to employ a socio-ecological model in exploring individual and contextual relational factors and their interplay in influencing selection of coping strategies with cyberbullying among adolescents. In particular, this is one of the first studies to provide empirical evidence on recent cyberbullying experts' ratings, views and opinions on factors influencing coping with cybervictimization (Jacobs et al., 2014). One hope is that the present study will stimulate further empirical work that explores an even broader consideration of socio-ecological models in understanding the psychosocial factors influencing coping behaviours in victims of cyberbullying.

5.3 Conclusions

This work provides initial empirical Tanzanian data on cyberbullying behaviour among adolescents, which is essential in guiding the development of comprehensive anti-cyberbullying education and intervention programs. Findings from this research have enhanced our knowledge and understanding of coping strategies used by cybervictims and the dynamic roles of individual and social factors influencing the adoption or selection of various coping strategies with cyberbullying among adolescents.

Having cyberbullying studies from African countries like Tanzania which lacks the broad database of research seen in European and North American contexts, is not only essential to inform intervention programs but also important for evaluating cross-cultural generality efforts in the midst of rapid development and changes in the digital landscape. In particular, given the digital divide that exists between parents and their children (Aoyama et al., 2012; Smith et al., 2008), especially Tanzanian parents who may be less digitally savvy relative to adolescents who were born in the digital age, findings highlight a need for holistic and culturally appropriate intervention and education programs which include children, adolescents, parents, and teachers. In particular, adults need to have digital conversations with their children early on and should be informed about help resources in order to improve adolescents' trust and confidence to reach out for help and support with cyberbullying incidents (Parris, 2012).

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Appendices

Appendix A : Questionnaire

A.1 Self-report Questionnaire

Cyberbullying and Coping in Tanzania

Questionnaire for Secondary School Students (Form I-IV), 2015

In many countries in the world, adolescents are the largest users of modern digital devices and technology such as mobile phones and Internet. For various reasons, the use of these devices have been linked with cyberbullying – harassment, abuse, and intimidation that occurs online and affects students' feelings, thoughts, and actions. The information you give us about your use of these devices and your experiences with cyberbullying is very important in helping making school and online space better and safer place for children and youth.

Some key things to remember:

- DO NOT write your name on this survey.
- This survey is voluntary and your answers are anonymous. No one will know what *your* answers are. We are only interested in what we learn from the group.
- This is NOT a test and there are no **right** or **wrong** answers, but it is important that you answer honestly.
- Whether or not you answer the questions will not affect your grade in this class.
- Make sure to read instructions and every question.
- Please do not look at other students' answers.
- Findings will be used for academic related purposes only.
- By filling out this survey you are agreeing to participate in this study.
- **Please respond by checking the box ✓.**

Thank you very much for your help.

SECTION 1: TELL US ABOUT YOURSELF

1. What is the name of your school? _____
2. What grade are you in? ☐ Form I ☐ Form II ☐ Form III ☐ Form IV
3. How old are you (in years)? _____
4. Are you a male or a female? ☐ Male ☐ Female ☐ Other
5. What is your religious affiliation (or faith)? (please check the one you most closely identify with)

   ☐ No Religious affiliation
   ☐ Christian
   ☐ Buddhist
   ☐ Sikh
   ☐ Muslim
   ☐ Hindu
   ☐ Other (Please list) _____

6. Which of these adults do you live with most of the time? (check all that you live with)

   ☐ Mother
   ☐ Father
   ☐ Stepmother
   ☐ Stepfather
   ☐ Grandmother
   ☐ Grandfather
   ☐ Mother and Father
   ☐ Foster parent(s)
   ☐ Other (please list): ☐

7. What is the highest level of education of the adults (parent/guardian) that you live with?

   ☐ Primary ☐ Secondary ☐ College ☐ University

8. How many siblings (brothers or sisters) live with you?

   ☐ None ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 and above

9. Do you interact more with male or female teachers? ☐ Male ☐ Female ☐ Both
10. What is the level of education of the teacher that you interact with most of the time?

    ☐ Diploma ☐ Degree ☐ Don't know

SECTION 2: MOBILE PHONES AND INTERNET USE

11. How many mobile phones does your family have at home?

☐ I do not have a mobile phone at home ☐ One mobile phone

☐ 2 mobile phones ☐ 3 or more mobile phones

12. Do you have your own mobile phone? ☐ Yes ☐ No

13. If yes, how old were you when you first got a mobile phone? _____

14. Do you use mobile phones at home? ☐ Yes ☐ No

15. Do you have your own mobile phone SIM card? ☐ Yes ☐ No

16. Are your parents aware that you have a mobile phone or a SIM card? ☐ Yes ☐ No

17. Do you sometimes share a mobile phone or handset with a friend? ☐ Yes ☐ No

18. How many computers does your family have at home?

☐ I do not have a computer at home ☐ 1 computer

☐ 2 computers ☐ 3 or more computers

19. Have you been connected to or used any device that connects to the internet (for example computer, iPad, tablet, mobile phones/blackberry, iPhone, smart phones)?

☐ Yes ☐ No

20. About how much time do you spend connected to the internet (on a computer, cell phone, or iPad) doing things like web surfing and watching videos, or texting and chatting with friends?

a. Out of the 7 days in a week, how many days do you go online?

I go online [ ] days of the week.

b. On a typical **weekday** that you go online (Monday to Friday), about how much time do you spend online?

I spend about [ ] hours and [ ] minutes online on a typical weekday.

c. On a typical **weekend** day that you go online (Saturday and Sunday), about how much time do you spend online?

I spend about [ ] hours and [ ] minutes online on a typical weekend day.

d. Do you think you spend more or less time online than your friends:

☐ I spend more time online than my friends

☐ I spend about the same amount online as my friends

☐ I spend less time online than my friends

21. When you connect to the internet at home, where are you **MOST OFTEN** located (check only one)?

☐ An open area where there are usually other people around.

☐ A private area where I am usually alone.

☐ I don't go online at home.

22. Are you connected to social network sites such as Facebook, Twitter, WhatsApp. Viber, and Instagram? ☐ Yes ☐ No

23. Have you ever received text messages, or phone calls from a friend or a stranger that made you sad, frustrated, or angry? ☐ Yes ☐ No

24. Have you ever sent, posted, created or forwarded something embarrassing or hurtful about someone using mobile phones or Internet? ☐ Yes ☐ No

25. Have you ever seen another student sending, posting, creating or forwarding something embarrassing or hurtful about someone using mobile phones or Internet?

☐ Yes ☐ No

SECTION 3: YOUR ACTIVITIES ONLINE

Part 1. Online Activities

Think about your use of mobile phones and devices that connect to the internet and indicate how much time on average you spend engaging in the following activities. **Remember to only check ONE answer for each question.**

Indicate how much of your time you spend engaging in the following activities:	None of my time	A small amount of my time(less than 30 minutes a day)	Some of my time (1 hour a day)	Most of my time (between 2-5 hours a day)	All of my time (more than 5 hours a day)
26. Socializing on social networking sites (for example, Facebook, Twitter, WhatsApp. Viber).	0	1	2	3	4
27. Playing games with other people (for example, World of Warcraft).	0	1	2	3	4
28. Playing online games by myself (for example, GTA vice city, Nick math, Mortal Kombat, Fruit Ninja, etc.).	0	1	2	3	4
29. Spending time in virtual worlds (Habbo Hotel, Club Penguin, Gaia).	0	1	2	3	4
30. Looking things up (Wikipedia), reading the news or people's blogs.	0	1	2	3	4
31. Watching videos or looking at images (for example on YouTube & Instagram).	0	1	2	3	4
32. Updating profile information and writing blog posts.	0	1	2	3	4
33. Text messaging.	0	1	2	3	4
34. Video chatting with people (Skype, Google).	0	1	2	3	4
35. Looking for academic materials.	0	1	2	3	4
36. Making calls to friends.	0	1	2	3	4

Part 2: Privacy Online

Please indicate how concerned you are about people *other than your friends* seeing the following things online:	**Not Concerned at all**	**Not Very Concerned**	**Somewhat Concerned**	**Quite Concerned**	**Extremely Concerned**
37. Your entire profile on Facebook (or other social networking site).	0	1	2	3	4
38. Photos and videos that you have posted of yourself online.	0	1	2	3	4
39. Photos and videos you have posted of others online.	0	1	2	3	4
40. Photos or videos that others have posted of you online (and tagged you in).	0	1	2	3	4
41. Messages to other people that you have posted online.	0	1	2	3	4
42. Messages to you from other people that are posted online.	0	1	2	3	4
43. General information about yourself (like gender, birth date, hometown).	0	1	2	3	4
44. Personal information about yourself (like your interests, activities, favourite movies, and relationship status).	0	1	2	3	4
45. Contact information for yourself (like your email, home address, and phone number).	0	1	2	3	4

SECTION 4: CYBERBULLYING EXPERIENCES

Part 1. Cyberbullying

The following questions are interested in your experiences with cyberbullying. Think about your experience of using mobile phones and devices that connect to the Internet and respond to the following statements. **Remember to only check ONE answer for each question.**

How often have you:	Has never happened	Has happened rarely	Happens every month	Happens every week	Happens several times a week
46. Posted or re-posted something embarrassing or mean about another person online?	0	1	2	3	4
47. Sent or forwarded a hurtful message electronically to someone (for example by email, text, on Facebook, etc.)?	0	1	2	3	4
48. Posted, re-posted, or texted an embarrassing photo or video of someone that he or she did not want others to see?	0	1	2	3	4
49. Posted or texted a hurtful comment about an online photo or video of somebody else (for example, made fun of how they look)?	0	1	2	3	4
50. Posted or sent messages to purposely exclude a certain person or group of people?	0	1	2	3	4
51. Posted or re-posted something private about another person that he or she did not want others to know?	0	1	2	3	4
52. Used email or text messaging to spread rumours or gossip about someone?	0	1	2	3	4
53. Texted or made hurtful comments about somebody's race or ethnicity?	0	1	2	3	4
54. Texted or made hurtful comments about somebody's perceived sexual orientation?	0	1	2	3	4
55. Texted or made hurtful comments about somebody's perceived sexual behaviours (for example, called somebody a slut or a pervert)?	0	1	2	3	4
56. Said something sexual to somebody else online to embarrass them?	0	1	2	3	4
57. Sent sexual content (photos or jokes) to somebody else online to embarrass them or to be mean?	0	1	2	3	4

Part 2: Cybervictimization

The following questions are interested in your experiences about being cyberbullied or harassed through mobile phones or Internet. Think about your experience in using mobile phones and other devices that connect to the Internet and respond to the following statements. **Remember to only check ONE answer for each question.**

How often have you:	Has never happened	Has happened rarely	Happens every month	Happens every week	Happens several times a week
58. Had something embarrassing or mean posted or re-posted about you?	0	1	2	3	4
59. Received a hurtful message from someone (for example by email, text, or chat)?	0	1	2	3	4
60. Had an embarrassing photo or video of you posted or re-posted that you didn't want others to see?	0	1	2	3	4
61. Had hurtful comments made about a photo or video of you?	0	1	2	3	4
62. Been purposely excluded online?	0	1	2	3	4
63. Had something personal posted or re-posted about you that you didn't want others to know?	0	1	2	3	4
64. Had gossip or rumours spread about you?	0	1	2	3	4
65. Received hurtful comments or messages about your race or ethnicity?	0	1	2	3	4
66. Received hurtful comments or messages about your perceived sexual orientation?	0	1	2	3	4
67. Received hurtful comments about your perceived sexual behaviours (for example, been called a slut or a pervert)?	0	1	2	3	4
68. Received a sexual message from somebody who was trying to be mean to you or to embarrass you?	0	1	2	3	4
69. Had sexual content (photos or jokes) sent to you from somebody who was trying to be mean to you or embarrass you?	0	1	2	3	4

Part 3: Reasons for Cyberbullying

Think about the times you have witnessed or been involved with cyberbullying through mobile phones or devices that are connected to the internet, and respond to how true the following reasons for cyberbullying are for YOURSELF and for OTHERS:

	YOURSELF			OTHER(S)		
	Not true of me	Somewhat true of me	Very true of me	Not true of others	Somewhat true of others	Very true of others
70. Posted or said mean things to others online because that person has annoyed you.	0	1	2	0	1	2
71. Posted or said mean things to show who was more powerful.	0	1	2	0	1	2
72. Reacted angrily online when provoked by others.	0	1	2	0	1	2
73. Said or posted mean things about others just for fun.	0	1	2	0	1	2
74. Posted or said mean things because you felt mad.	0	1	2	0	1	2
75. Posted or said mean things to be cool.	0	1	2	0	1	2
76. Picked on others because you don't think they are 'normal'.	0	1	2	0	1	2
77. Posted or said mean things to impress others.	0	1	2	0	1	2
78. Posted lies about someone because they did the same thing to you.	0	1	2	0	1	2
79. Posted or said mean things because others have threatened you.	0	1	2	0	1	2
80. Posted or said mean things to defend yourself or someone else.	0	1	2	0	1	2
81. Said or posted mean things when you were teased.	0	1	2	0	1	2
82. Threatened, posted, or said mean things so others would do things for you.	0	1	2	0	1	2
83. Become angry or mad when you don't get your way and then taken it out by posting or saying mean things to others.	0	1	2	0	1	2
84. Posted or said mean things to others because they are different from you.	0	1	2	0	1	2
85. Posted or said mean things to others because you think they are acting like a bully.	0	1	2	0	1	2

SECTION 5: COPING WITH CYBERBULLYING

Part 1. Coping strategies

Students do different things to deal with hurtful problems or to make themselves feel better. Please read each item to the left and choose the answer that best fits ***how you responded*** or ***how you would respond*** to being **cyberbullied (**harassment, embarrassment, abuse, and intimidation that occurs through mobile phones and internet devices). Also indicate how effective this response would be.

	What would you do or what did you do?				**How effective would it be or how effective was it?**			
	Never do this	Some times do this	Often do this	Always do this	Never Effective	Some times Effective	Often Effective	Always Effective
86. Listen to music.	0	1	2	3	0	1	2	3
87. Think about what I could do before I do something.	0	1	2	3	0	1	2	3
88. Write down my feelings.	0	1	2	3	0	1	2	3
89. Do something to make myself feel better (for example, deleting the information).	0	1	2	3	0	1	2	3
90. Try to notice or think about only the good things in life.	0	1	2	3	0	1	2	3
91. Go bicycle riding.	0	1	2	3	0	1	2	3
92. Try to stay away from the problem by staying offline.	0	1	2	3	0	1	2	3
93. Try to put it out of my mind.	0	1	2	3	0	1	2	3
94. Figure out what I can do by talking with one of my friends.	0	1	2	3	0	1	2	3
95. Think about why I have been harassed or cyberbullied.	0	1	2	3	0	1	2	3
96. Think about what would happen before I decide what to do.	0	1	2	3	0	1	2	3
97. Try to make things better by changing what I do online.	0	1	2	3	0	1	2	3
98. Talk about how I am feeling with my mother or father.	0	1	2	3	0	1	2	3
99. Tell myself the problem will be over in a short time.	0	1	2	3	0	1	2	3
100. Play sports.	0	1	2	3	0	1	2	3
101. Talk about how I am feeling with an adult who is not in my family.	0	1	2	3	0	1	2	3
102. Ask God to help me understand it.	0	1	2	3	0	1	2	3

	What would you do or what did you do?				How effective would it be or how effective was it?			
	Never do this	Some times do this	Often do this	Always do this	Never Effective	Some times Effective	Often Effective	Always Effective
103. Cry by myself.	0	1	2	3	0	1	2	3
104. Go walking.	0	1	2	3	0	1	2	3
105. Imagine how I would like things to be.	0	1	2	3	0	1	2	3
106. Talk to my brother or sister about the problem and how to make things better.	0	1	2	3	0	1	2	3
107. Try to understand and think more about the problem of cyberbullying.	0	1	2	3	0	1	2	3
108. Read a book or news paper.	0	1	2	3	0	1	2	3
109. Try to stay away from mobile phones and devices that connect to the Internet.	0	1	2	3	0	1	2	3
110. Try to solve the problem by talking about it with my mother or father.	0	1	2	3	0	1	2	3
111. Think about what I can learn from experience of being cyberbullied.	0	1	2	3	0	1	2	3
112. Let out feelings to others (e.g., sister, my brother, other students, housegirl/boy, my pet or stuffed animal, etc.).	0	1	2	3	0	1	2	3
113. Think about how best to handle my problems with cyberbullying.	0	1	2	3	0	1	2	3
114. Talk with my brother or sister about my feelings.	0	1	2	3	0	1	2	3
115. Wait and hope that things will get better.	0	1	2	3	0	1	2	3
116. Think about what I need to know so I can solve my problem with cyberbullying.	0	1	2	3	0	1	2	3
117. Go to the beach or disco club.	0	1	2	3	0	1	2	3
118. Talk with one of my friends about my feelings.	0	1	2	3	0	1	2	3
119. Watch TV.	0	1	2	3	0	1	2	3
120. Avoid the people who harassed, abused, or intimidated me over mobile phones or the Internet.	0	1	2	3	0	1	2	3

121. Do something to solve my problem with cyberbullying.	0	1	2	3	0	1	2	3
122. Remind myself that things could be worse.	0	1	2	3	0	1	2	3
123. Do some exercise.	0	1	2	3	0	1	2	3
124. Try to figure out what I can do by talking to adult who is not in my family.	0	1	2	3	0	1	2	3
125. Avoid it by going to my room.	0	1	2	3	0	1	2	3
126. Try to figure out why things like cyberbullying happen.	0	1	2	3	0	1	2	3
127. Wish that things were better.	0	1	2	3	0	1	2	3
128. Tell myself it is not worth getting upset about cyberbullying.	0	1	2	3	0	1	2	3
129. Do something else like play video games.	0	1	2	3	0	1	2	3
130. React angrily on the phone or Internet.	0	1	2	3	0	1	2	3
131. Think about ways that I could punish the person.	0	1	2	3	0	1	2	3
132. Organize with my friends to get back at the person in some ways.	0	1	2	3	0	1	2	3
133. Get back at the person by excluding them or spread stories that hurt his/her reputation.	0	1	2	3	0	1	2	3
134. Tell my friends I wish the bully would get hurt.	0	1	2	3	0	1	2	3
135. Get back at the person by threatening or insulting him/her.	0	1	2	3	0	1	2	3

SECTION 6: ABOUT ME AND MY RELATIONSHIPS

Part 1. Self-esteem

Please read items to the left and choose the answer that best fits how you feel about yourself. **Remember to only check ONE answer for each question**.

Please rate how much you agree or disagree with each of the following statements:	Strongly Disagree	Disagree	Agree	Strongly Agree
136.On the whole, I am satisfied with myself.	0	1	2	3
137.At times I think I am no good at all.	0	1	2	3
138.I feel that I have a number of good qualities.	0	1	2	3
139.I am able to do things as well as most other people.	0	1	2	3
140.I feel 1do not have much to be proud of.	0	1	2	3
141.I certainly feel useless at times.	0	1	2	3
142.I feel that I'm a person of worth.	0	1	2	3
143.I wish I could have more respect for myself.	0	1	2	3
144.All in all, I am inclined to think that I am a failure.	0	1	2	3
145.I take a positive attitude toward myself.	0	1	2	3

Part 2. General social assertiveness

Please read the question to the left and choose the answer that best fits how you feel about yourself. **Remember to check ONE answer for each question**.

Indicate how often each of the following statements is true about you:	Never do this	Sometimes do this	Often do this	Always do this
146.Express an opinion that differs from what the person you are talking to is saying.	0	1	2	3
147.Tell people when you feel they have done something that is unfair.	0	1	2	3
148.Ask for service when you are not getting it.	0	1	2	3
149.Request that someone return borrowed things.	0	1	2	3
150.Return items that you are not satisfied with.	0	1	2	3
151.Ask a person annoying you to stop.	0	1	2	3
152.Resist sales pressure from a salesman/woman.	0	1	2	3
153.Tell someone you like them.	0	1	2	3
154.Compliment a person you are going out with.	0	1	2	3
155.Ask whether you have offended someone.	0	1	2	3
156.Start a conversation with a stranger.	0	1	2	3

Part 3: How I Feel

Please check the box under the option that is best for you, even if it is hard to make up your mind. There are no right or wrong answers.

Indicate whether the following statements are True or False:	True	False
157.Nothing goes my way.	T	F
158.I used to be happier.	T	F
159.I can never seem to relax.	T	F
160.I worry about little things.	T	F
161.Nothing is fun anymore.	T	F
162.Nobody ever listens to me.	T	F
	True	**False**
163.I just don't care anymore.	T	F
164.I worry a lot of the time.	T	F
165.I often worry about something bad happening to me.	T	F
166.I don't seem to do anything right.	T	F
167.Nothing ever goes right for me.	T	F
168.Nothing about me is right.	T	F

Indicate how often:	Never	Sometimes	Often	Almost Always
169.I get so nervous I can't breathe.	0	1	2	3
170.I worry when I go to bed at night.	0	1	2	3
171.I feel like my life is getting worse and worse.	0	1	2	3
172.I feel depressed.	0	1	2	3
173.No one understands me.	0	1	2	3
174.I feel guilty about things.	0	1	2	3
175.I get nervous.	0	1	2	3

Indicate how often:	Never	Sometimes	Often	Almost Always
176.I worry but I don't know why.	0	1	2	3
177.I feel sad.	0	1	2	3
178.I get nervous when things do not go the right way for me.	0	1	2	3
179.Little things bother me.	0	1	2	3
180.I worry about what is going to happen.	0	1	2	3
181.I am afraid of a lot of things.	0	1	2	3

Part 4. Parent-child Relationship

For the following items, think about yourself and your relationship with the parent/guardian you live with most of your time. Choose the answer that best fits how you feel about by checking ONE answer for each question.

	Not at all true	Sometimes true	Often true	Always true
182. I feel like my parents and I do a lot of things together.	0	1	2	3
183. I have a lot in common with my parents.	0	1	2	3
184. I feel I have a strong connection with my parents.	0	1	2	3
185. I feel like my parents want to be with me.	0	1	2	3
186. I feel that I usually fit in with my parents.	0	1	2	3
187. When I want to do something for fun, I can usually find a parent to join me.	0	1	2	3
188. When I am with my parent(s), I feel like I belong.	0	1	2	3

Part 5. Peer Relationships

Read the question to the left and think about yourself and children your age when responding. Choose the answer that best fits how you feel about yourself by checking ONE answer for each question.

How do you feel about your relationship with other children of your age?	Not at all true	Sometimes true	Often true	Always true
189. I feel like other students and I do a lot of things together.	0	1	2	3
190. I have a lot in common with other students.	0	1	2	3
191. I feel I have a strong connection with other students.	0	1	2	3
192. I feel like other students want to be with me.	0	1	2	3
193. I feel that I usually fit in with other students around me.	0	1	2	3
194. When I want to do something for fun, I can usually find friends to join me.	0	1	2	3
195. When I am with other students, I feel like I belong.	0	1	2	3

Part 6. Teacher-child Relationship

For the following items, think about yourself and your relationship with your teacher(s) in school. Choose the answer that best fits how you feel about by checking ONE answer for each question.

How do you feel about your relationship with your teachers in school?	Not at all true	Sometimes true	Often true	Always true
196.I feel like my teachers and I do a lot of things together.	0	1	3	4
197.I have a lot in common with my teachers.	0	1	3	4
198.I feel I have a strong connection with my teachers.	0	1	3	4
199.I feel like my teachers want to be with me.	0	1	3	4
200.I feel that I usually fit in with my teachers.	0	1	3	4
201.When I want to do something for fun, I can usually find a teacher in school to join me.	0	1	3	4
202. When I am with my teacher(s), I feel like I belong.	0	1	3	4

Thank you so much for your help!

☺

A.2 Invitation Letter to Participate in an Interview

INVITATION TO PARTICIPATE IN AN INTERVIEW

If you have had experienced cyberbullying, we would love to hear more about your experience and how you managed it.

Please fill out your name and contact information below if you are interested in participating in a 30 minute interview, that will be arranged at your convenience. **Your participation is completely voluntary. Only fill out your information below if you are interested in participating:**

□ YES, I would like to share my experience.

Name: (PLEASE PRINT) _____

Mobile Number:_____

E-mail_____

Grade (Form): _____

School: _____

If you have completed this form, please detach this paper from the rest of the questionnaire and hand it in separately

Appendix B **: Semi-Structured Interview**

Cyberbullying in Tanzania

Semi-Structured Interview Questions for Secondary School Students

As Victim

1. Think of your experience on the use of mobile phones and the Internet. Have you ever been harassed, intimidated, hurt by things people have done or said to you through the mobile phones or on the Internet?

    a. Can you explain on how does it usually happen?

    b. Would you explain more about why cyberbullying happens?

2. Who was/were the perpetrator(s)?

3. What media did they use to bully you and how?

4. Are the people who have been harassing you online also harass you at school?

5. Have you done anything to cope or in response to the online harassment?

    a. What have you tried?

    b. Which strategies do you find to be most effective? and Why?

6. Do you think hurtful things that are said to you through mobile phones and on the Internet have effects on your well-being?

    a. What are some of the effects?

Appendix C **: Consent Form**

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Educational and Counselling Psychology, and Special Education

The University of British Columbia

Faculty of Education

2125 Main Mall

Parental Consent Form

Cyberbullying in Tanzania: Adolescents' Experiences and the Psychosocial Factors Influencing Coping Strategies in Victims

Your child has been invited to participate in a research study conducted by the University of British Columbia-Canada that will be occurring in the coming weeks in Dar es Salaam and Mwanza. Please take a moment to review this information about the study.

Principal Investigator: Dr. Jennifer Shapka

Associate Researcher: Hezron Zacharia Onditi

Purpose: In many countries in the world, adolescents are currently the largest users of modern digital devices such as mobile phones and Internet. Despite the advantages these technologies afford, the use of these technologies have been linked with a host of negative impacts including *cyberbullying*, which is defined as harassment, humiliation, abuse, and intimidation that occurs online and affects students' feelings, thoughts, and actions. Very little is known about Tanzanians adolescents' experiences of cyberbullying and their coping strategies. This study aims to examine this and the results will be used to inform parents, teachers, and policy makers for developing intervention programs.

This study involves having your child complete a questionnaire and an interview about his or her use of mobile phones and the Internet, as well as their cyberbullying experiences and coping strategies. Demographic questions such as age, grade level, and gender will also be asked, so that we can gain a better sense of who the participants are. The questionnaire will take about 40

minutes during class time. Non-participating students will be asked to do work on their own or go to the library while the study is being completed. A subset of 10 participants, who have experience with cyberbullying, will be invited to be involved in a 30 minute interview to ask them more detailed questions about how they dealt with cyberbullying.

There are no known risks associated with this study, however, should your teen feel uncomfortable, he/she has the right to withdraw from the study without any penalty, at any time. If you do not wish your child to participate in this study, you must return the third page of this letter, indicating this. If you would like to view the questionnaire that your child will be filling out, please contact Dr. Jennifer Shapka (email: XXX; phone: XXX) who will provide you with a copy of the questionnaire via mail or via email. The school also has a copy of the questionnaire available for you to look at.

Confidentiality: Questionnaires will be completed individually, and your child's answers to the questionnaire and the interview will not be available to other participants in the study. Having participated in the study will not be entirely confidential however, as other participants may be present while your teen completes the questionnaire**.** It is important to note that no identifying information will be collected and that all data collected will be kept securely. In all data files, participants will not be identified. In addition, all files will be password protected and will be accessible only to the core research team.

Contact for information about the study: If you have any concerns, questions or desire for further information with respect to this study or to obtain a copy of the questionnaire, contact Dr. Jennifer Shapka at XXX, or her research associate, Hezron Zacharia Onditi at XXX.

Contact for concerns about the rights of research subjects: If you have any concerns or complaints about your child's "rights as a research participant and/or experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598 (Toll Free: 1-877-822-8598)".

****IMPORTANT**: You are only required to fill and return the last page of this form if you DO NOT wish your child to participate in any part of this study. You may choose NOT to return this form if you agree with your child to participate in this study**

Consent:

Your child's participation in this study is entirely voluntary and you may refuse to have him or her participate this study by returning this form, or have him or her withdraw from the study at any point without jeopardy to his or her class standing.

Your signature below indicates that you have received a copy of this consent form for your own records and that you DO NOT consent to your child's participation in the study.

☐ I DO NOT consent to my child's participation.

Name of Child (please print):_____

Your Name (please print):_____

_____

Your Signature Date