Cyberbullying: The Role of the Participants and Self-esteem among High School Adolescents in Gilgil Sub-County, Kenya

Racheal N. Wanjohi[*], Professor James Awino, Dr. James Kay
Lecturers, Kabarak University, Kenya

Abstract: Cyberbullying consists of numerous identities that can be referred to as cyberbully typologies that address the different roles the individuals in these groups take in regard to cyberbullying. The goal of this study was to explore the different cyberbully typologies in relation to self-esteem. Specifically, this study investigated cyberbullying from four angles (a) what are the prevalence rates in the different cyberbully typologies? (b) Is there age difference in the different cyberbully typologies? (c) Is there gender difference in the different cyberbully typologies? (d) What is the influence of cyberbully typologies on self-esteem? Data was randomly collected from 385 high school students from 6 schools. The instrument composed of the Rosenberg's [77] self-esteem Scale (RSES) and researcher designed cyberbullying items. The study found cyber bullies spent longer duration online than the other cyberbully typologies. The negative correlation between self-esteem scores and all the cyberbully typologies except for the non-involved is an indication that involvement in cyberbullying behaviours have an influence on the development of self-esteem. The study advocates for more studies on the influence of cyberbullying and psychological wellbeing among the youths in Kenya.

Keywords: Cyberbullying, cyberbully typologies, self-esteem, cyber bully, cyber victims, cyber victimisation.

INTRODUCTION

Some studies have inclined to investigate only whether individuals can be categorised as solely cyber victims or cyber bullies [1, 2]. However, cyberbullying has been found to cause negative consequences even among the other cyberbully typologies [3-5]. Such consequences include development of low self-esteem, conduct problems and poor academic performance among the adolescents in schools. For an in depth understanding of the influence of cyberbullying on self-esteem, this study investigated five groups; the cyber bully, cyber victim, cyber bully/victim, bystander and those not engaged in cyberbullying.

High self-esteem is a shield for sheltering adolescents from depression [6]. Adolescents with low self-esteem have been found to exhibit depressive moods and disorders, less life satisfactions and less general well-being [7]. Erol & Orth [8] found that self-esteem increases moderately through adolescents and continues in young adulthood. However, longitudinal studies have reported stable levels of self-esteem in adult years. According to Healy [9], self-esteem declines during adolescence and then increases steadily during adulthood. This could be explained by the fact that during adolescence one is trying to explore one's beliefs, values and self-perceptions to thereby help one attain a sense of identity [10].

Relevant studies have shown an existence of variations in regard to the number of cyberbully typologies groups, and on the prevalence rates in the different groups [11-13]. Musharraf and Anis-ul-Haque [14] included four categories cyber victim, cyberbully, cyberbully/cybervictim and non-involved in their study sample of 508 college students in Pakistan. The study found 67% of the students were involved in cyberbullying of which 25% were cyber victims, 4% were cyberbullies and 39% cyberbullies/cybervictims. These results and interpretation need to be considered with caution because of lack of a gender balance in the sample (348 females and 160 males). The present study addressed this limitation by using a sample with a balanced gender ratio.

Schultze-Krumbholz *et al*. [15] found absence of an exclusive victim typology in their sample of 6260 adolescents aged 14 to 18 years from six European countries. The study only found three cyberbully typologies; both cyberbully/victim, cyberbully and non-involved. The lack of the cyber victim typology was hypothesized to have been due to an overlap within the groups indicating the victims had turned to bullying others. This was consistent with Kolwalski, Giumetti, Schroeder and Lattanner [16] findings that indicated an overlap and lack of a pure victim group. Xiao and Wong [17] grouped their sample of university students in Hong Kong into three cyberbully typologies.

However, the exclusive cybervictim's typology was present in the study.

Brack and Caltabiano [12] identified five cyberbully typologies (cyberbully, cybervictim, cyberbully/cybervictim, cyber-bystanders and non-involved) in their study that examined prevalence of cyberbully typologies and their relationship with self-esteem among 164 Australian youths, aged 17-25 years. The study found that the largest percentage of their sample was the group with the cyberbully/cybervictim (62%) followed by the non-involved (17%), the cyberbullies (11%) and the cybervictims (10%). The study also found that the ratio of male to female in the four cyberbully typologies was similar. Although this study brings out new knowledge to the field of cyberbullying especially in the inclusion of the cyber-bystander group, the study has a few limitations that may hinder the generalization of the study findings. First, the study sample had more female representation. Secondly, the study used a cyberbullying scale (Revised Cyberbullying Inventory) that was not able to categorise the cyber-bystanders. Finally, it used a convenient sample by sampling from one university's website and one social networking site. The current study will use a balanced gender ratio and a probability sampling method to avoid these limitations.

According to Baldry, Farrington & Sorrentino [18] most studies have neglected the cyberbully/cybervictim category. However Baldry *et al.* [18] argue that studying the group may help to get a deeper understanding of cyberbullying. The cyberbully/cybervictim typology happens to have the largest proportion when compared to the other groups [14, 13, 19]. The large numbers in the cyberbully /cybervictim may be explained by the overlap that seems to exist between cyber perpetration and cyber victimisation in some studies [20].

Victims of bullying can be categorized as passive or provocative [21]. Passive victims are individuals who appear shy, withdrawn, and over-cautious, feel inadequate or unhappy and have few friends [22]. The provocative ones, are over-assertive, over-confident, irritate others, causing their peers to isolate them [23]. The sense of being socially devalued by the peers makes aggressions against the victims to seem okay by the members of the cliques [24]. Children who depict early signs of aggression are vulnerable to becoming victims of bullying because the aggressive nature attracts unfriendliness from the peers [21]. In addition, victims of bullying have been found to show poor grades, absenteeism and are likely to have low self-esteem [25]. A longitudinal study demonstrated evidence of emotional and psychological problems among cybervictims [26]. No wonder, cybervictims were found to be more inclined to developing suicidal ideations and approximately twice as much likely to attempt suicide and to abuse others [27]. Besides,

victims tend to become vulnerable to victimisation even at their workplace, later in life [25].

The cyberbullies tend to have poor interpersonal skills, are mostly struggling with difficult issues at home and generally have poor academic performance [28]. The bullies engage in bullying to feel that they have power and success [29] and may lack emotional and empathetic understanding of the victims [30]. Low self-control has also been associated with cyberbullies [31]. For instance, Chui and Chan [32] found an association between low self-control and cyberbullies among Macanese males aged 10 to 17 years. Varzsonyi, Machackova, Sevcikova, Smahel and Cerna [33] found similar findings among 25,000 adolescents across 25 European countries Li [34] found that of those who cyberbully, 64% do it for fun and 45% do it because of different reasons; feeling angry, insecure or bored others because of being jealous, mean or having family issues Li [34] argues that sometimes adolescent may perceive technology as exciting and so send hurtful messages and photos as just but part of the creative acts without realizing the impact of the acts on the victims. Campbell, Slee, Spears, Butler and Kift [35] reported that cyberbullies report engaging in less prosocial behaviour and are more likely to express negative emotions. Moreover, bullies become susceptible to mental sickness, drugs abuse and problems with the law in their adult life [36, 37]. Being a cyberbully has been found to cause the development of low self-esteem and other psychological, social and emotional problems that result to poor academic performance [38, 27].

The cyber-bystanders play an important role because witnessing cyberbullying may have implication in terms of stopping or perpetuating cyberbullying [39]. Myers and Cowie [40] suggest that cyberbullying intensifies as a result of the responses of the cyber-bystanders. Bastiaensens *et al.* [41] suggest that peers and especially cyber-bystanders should discourage the cyberbullies to help end cyberbullying. The cyber-bystander behaviour can be identified as active or passive reactions to cyberbullying from those who witness [42]. The active reactions to cyberbullying include deleting or forwarding the hurtful message to others and passive reaction indicates those who take no action [42]. Barlinska, Szuster, and Winiewski [43] defined negative bystander as those who choose to spread the cyberbullying material rather than delete it. Furthermore, forwarding the message spreads the cyberbullying material to a wider audience and may eventually increase the psychological harm to the victim [44]. According to Machackova, Dedkova, Sevcikova and Cerna [45], the role of the cyber-bystander could be categorised as confrontational versus supportive behaviour. Confrontational (defender) cyber-bystanders are those who confront the bully in defence of the victim whereas supportive bystanders encourage the victim by comforting or reporting to adults in order to

help the victim or support the victim by deleting the hurtful messages [46]. Self-efficacy was found to be positively associated with defender bystander and negatively associated with passive bystander amongst both boys and girls [46]. Li [34] study investigated students' behaviours and beliefs about cyberbullying among 269 students in grade seven through twelve in five Canadian schools. The study found that one in eight students who witnessed cyberbullying joined in and cheered the cyberbully but majority reported that they watched and did nothing to stop it Li [34] argues that the behaviours of the cyber-bystanders; joining in or even simply watching somehow encourages and sustains the cyberbully's behaviours. Other related studies indicate that only a small percentage of the cyber-bystanders offer emotional support or protect the victim [40, 47]. Davis and Nixon [48] found that females are likely to defend or comfort the cybervictims but males are likely to reinforce the behaviour and term it funny. The current study found it important to include the cyber-bystander to investigate if witnessing cyberbullying has any influence on self-esteem among the adolescents in Gilgil.

Cyberbullying has been found to cause negative consequences among the different cyberbully typologies [3, 4]. Such consequences include the development of low self-esteem and poor academic performance among the adolescents in schools. A cross-cultural study that investigated cyberbullying victimisation, prevalence and association among adolescents in European countries found evidence of negative effects on academic performance [49]. Another study by Gardella, Fischer and Teurbe-Tolon [50] found association between cyber victimisation and both school attendance problems and poor academic performance in their sample of adolescents aged 12 to 17 years. Studies have also indicated a relationship between cyberbullying and psychosocial maladjustment that include anti-social behaviours, substance abuse, deviance, lack of self-control and school related problems [51, 52]. In addition, cyber victimisation was associated with social anxiety symptoms [11, 53] and depression tendencies [54]. Moreover, cyber victimisation was associated with increased suicidal ideation among 399 Canadian adolescents in 8th through 10th grade [55] and among 4693 public high school students in the USA aged 14 to 19 years [56]. Similarly, Rodeli [57] found cyber perpetration, cyber victimisation and witnessing cyberbullying were associated with high levels of suicidal ideation in a study among 1037 students, aged 12-18 years in Flanders, Belgium.

Cyberbullying brings a range of emotions; shame and fear among the cybervictims, guilt and shame among the passive cyber-bystanders, outrage, altruism and empathy among the defender cyber-bystanders and pride, joy and guilt among the cyberbullies [40]. Randa [58] found cybervictims to

suffer from increased fear of victimisation, hurt and self-blame in a sample of 3500 adolescents aged 12-18years. On the other hand, Myers and Cowie [40] qualitative study among 60 students in the UK, found that cyber-bystanders tend to blame the cybervictims, and are reluctant to help while the cybervictims feel let down and downgraded by their peers. Other studies report that the negative effects of both cyber perpetration and victimisation include depressive mood, loneliness, frustration, sadness, and other emotional difficulties [3, 59].

Being a cybervictim can cause a lot of emotional and psychological harm that can result to adolescents developing low self-esteem [60]. A study that investigated cyberbullying, help-seeking and mental health in young Australians adults found that cyberbullies also demonstrated negative psychological outcomes [61]. Although Brighi *et al.* [4] suggests that cyberbullies possess self-esteem levels more closely related to pure cybervictims, Musharraf and Anis-ul-Haque [14] found lowest mental well-being in cybervictims as compared to the other cyberbully typologies. Cyber victimisation was linked to decreased self-esteem among 2992, 10th graders in Taiwan (Chang *et al.* [62] and among 388 American adolescents in 6th to 12th grade [63]. Similarly, Wolke, Lee and Guy [64] found cyber-victims were more affected in relation to self-esteem than those not involved in cyberbullying in a study conducted among 2745 students aged 11-16 from UK secondary schools. In contrast, Healy [9] found no significant difference between self-esteem in cyberbullying victims and non-victims among the Irish girls. In addition, Zacchilli and Valerio [1] found no significant relationships between being a bully or victim and self-esteem among college students. Healy [9] study had a small sample of n=91 and was restricted to only a girl's high school and Zacchilli and Valerio [1] study was among an older age group (college students), limiting the generalizability of the findings to other population. The current study overcame this limitation by using a balanced gender ratio and using high school adolescents.

Studies in Africa also indicate the existent of the different cyberbully typologies with different prevalence rates. A study by Tustin and Zulu [65] in South Africa, uncovered three groups, cybervictims (34.4%), the cyber-bystanders (38.1%) and the cyberbullies (23.3%) in a sample of 371 adolescents in grades 8 to 12. A study by Sam, Bruce, Agyemang, Amponsah and Arkorful [66] that investigated cyber victimisation, dichotomized their sample of 364 high school students and 476 university students in Ghana to victims and the non-victims. The study found no gender difference in being a victim of cyberbullying. Okoiye, Nwoga and Onah [67] conducted an exploratory research among 300 in-school adolescents, from fifteen randomly selected secondary schools in Nigeria which established that there was a significant relationship (F-

Ratio (3/296) = 10.451) between cyberbullying and self-esteem. Olumide, Adam and Amodu [68] found that 50% of the sample had witnessed cyberbullying and 25% were engaged in cyberbullying their peers, in a study among secondary schools' students in Nigeria. A qualitative study by Govender [69] among learners in South Africa indicated that the victims were turning to suicidal ideations, self-harm and substance abuse as a means to escape the hurt from the bullies.

Schenk, Fremouw and Keelan [70] suggest that introducing cyberbully typologies is an important methodological step in the field of bullying because previously researchers inclined to investigate the construct as a continuum ranging between bully and victim. Of those who categorized the roles of the participants, some only dichotomized as cyberbullies or cybervictims [66, 1] and others overlooked the cyber-bystander group [14] [17]. The present study bridged this gap by exploring cyberbullying in specific cyberbully typologies; the cyberbully, cybervictim, cyberbully/cybervictim, the cyber-bystander and the non-involved. In addition, the present study did not just look at the prevalence rate among the groups but examined the influence of the cyberbully typologies on self-esteem.

Research Questions
- What are the prevalence rates in the different cyberbully typologies?
- Is there age difference in the different cyberbully typologies?
- Is there gender difference in the different cyberbully typologies?
- What is the relationship between cyberbullying typologies and self-esteem?

Theoritical framework
This study was informed by the psychosocial theory developed by Erick Erickson. The theory outlines the eight stages that individuals go through from childhood to adulthood and the psychosocial crisis in each stage. The psychosocial crisis during the adolescence stage is ego identity vs. role confusion. Erickson [71] describes ego identity as the conscious sense of self that one develops through social interaction with others. According to the theory, an individual's ego identity is constantly changing as a result of new experiences and information an individual acquires in daily social interactions.

The development of a strong sense of identity depends on an individual overcoming uncertainty and attaining more self-awareness of their strength and weakness and becoming confident in their own unique way [72]. Online social networking facilitates adolescents' identity formation and provides an opportunity for self-definition and self-reflection [73]. It is interesting to note that teenagers will post stuff on their profiles so that they can receive audience feedback. Stern [10] argues that connection and validation impels the young to share so much about their personal life on the cyber space.

Despite adolescents relying largely on their social environment to achieve self-identity, the cyber space can become a dangerous environment for the vulnerable adolescents. Young people who have low self-esteem succumb to peer pressure and manipulation which jeopardize their lives. For example, information posted on the cyber space can be misused by the bullies. Best, Manktelow and Taylor [74] study indicated that the larger the online social network, the longer the duration of exposure to embarrassing comments and posts. Indeed, cyberbullying challenges can cause major impact on one's self-esteem and identity formation in the teenage years and later in adulthood [75]. This theory addresses how online social networking facilitates the development of self-esteem by providing social platforms that help adolescents to feel positive about themselves. It also gives explanation to what impels the young to share so much about their personal life and what the digital world means to the adolescents.

METHODS
This was a mixed method study; the quantitative approach utilized an *ex-post facto* cross-sectional survey design. Focus group comprising of seven students discussed items on the related variables. The quantitative data was collected from 385 randomly selected students from 6 day high schools in Gilgil sub-county. To increase the rate of return, data collection took place in one location and the questionnaires were collected immediately the exercise was over.

The researcher sought ethical approval from the national research body, NACOSTI, the County office, the County Education office and the participating schools. The teachers and parents gave consent for those respondents who were minors. At the same time the respondents were informed that participation was voluntary.

The Rosenberg's [77] self-esteem Scale (RSES) was used to measure the self-esteem levels. The scale has been the most commonly used measure of global self-esteem [76]. This standardized scale has a four point Likert scale, ranging from *1 = "strongly agree"* to *4 = "strongly disagree".* The 10 items compose of five positively and five negatively worded statements. Summed scores provide a measure of the global self-esteem, ranging from 10-40, with high scores indicating high global self-esteem. The RSES has been found to have a high validity and high reliability with Cronbach's coefficient scores ranging from α =0.84 to 0 .95 [77]. The present study found the RSES to have a strong Cronbach's coefficient of $\alpha = 0$ .896. The cyberbullying tool consisted of some statements that were self-report measures with a 5-point

Likert scale, with a rating of 1=Never, 2= once or twice, 3= a few times, 4=many times, 5= every day for items on media used in cyberbullying. The Cronbach coefficient computed for the cyberbullying items in the present study was found to be α = 0.706. Piloting took place in a school that was randomly selected from those not included in the final study sample. Piloting helped to determine the reliability of the study instrument and the average time needed to complete the questionnaires which were approximately forty minutes.

RESULTS AND DISCUSSION
The average age for this study sample was 16 years with a standard deviation of 1.260 on the actual age or 0.632 on the clustered age (15 and below, 16-17, and 18 and above). The study findings indicate that the largest proportion of those who were in the age cluster 15 and below was in the Form 1 class (46.1%) and the least was in Form 3 class (15.2%). The Form 1 class had the least number of respondents who were in the age cluster 18 and above. The Form 3 class had the highest proportion of those who reported being in the age clusters, 18 and above years and 16-17years. Most Form Two and Form Three students were in the age cluster 16-17 years. In all the classes, the age cluster with the highest percentage of respondents was 16-17 years which was 48.1% and the lowest percentage was the category of 18 years and above at 8.6%. These findings are consistent with the age distribution in the Kenyan education system; on average, the students in Kenya join Form one at the age of 14 years. A Chi-square test of independence indicated a significant association between age clusters and class levels $\chi^2(1, n=385) = 36.959$, *p*=0.0, Cramer's V= 0.219).

Cyberbully Typologies among Adolescents
The respondents were asked if in the last six months, one engaged, experienced or witnessed online harassment. To find out those who engaged in cyberbullying the respondents were asked, "*In the last six months did you ever use a cell phone or the internet to send or post messages or images to hurt, embarrass, threaten or spread gossip about someone?*" If the response was *yes,* then the individuals were categorised as cyber bullies. Those respondents were further asked to state if the reason for cyberbullying was because others had done it to them; those who reported *yes* were considered as both cyber bully/cyber victims. To find out those who experienced cyberbullying, the respondents were asked, "*In the last six months, did anyone ever use a cell phone or the internet to send or post messages or images to hurt, embarrass, threaten you or spread gossip about you?*" Those who indicated *yes* were grouped as cyber victims. To find out those who witnessed cyberbullying, the respondents were asked, "*Have you witnessed someone you know being hurt, embarrassed or threatened by use of cell phone or the internet in the last six months?*" Those who indicated that they have witnessed cyber activities among their friends were considered as bystanders. The respondents were asked if they have experienced, engaged or witnessed online harassment, in the last six months. Those who indicated *no* were grouped as non-involved. The cross-tabulation of cyber typology, gender and age is indicated in Table 1.

Table-1: Cross-tabulation of Respondents' Cyberbully Typologies Gender and Age

Cyber typology	Gender	Age (years)			
		15 & below	16-17	18 & Above	Totals (%)
		Frequency	Frequency	Frequency	Frequency (%)
Cyber Bully	Male	24	37	5	66 (50.8%)
	Female	32	30	2	64 (49%)
	Total	56	67	7	130 (33.8%)
Cyber Victim	Male	22	40	3	65 (48.1%)
	Female	34	34	2	70 (51.9%)
	Total	56	74	5	135 (35.1%)
Both Cyber Bully/Victim	Male	10	20	3	33 (54.1%)
	Female	10	18	0	28 (45.9%)
	Total	20	38	3	61 (15.8%)
Bystander	Male	32	31	3	66 (47.1%)
	Female	32	36	6	74 (52.6%)
	Total	64	67	9	140 (36.4%)
Non-Involved	Male	45	58	5	108 (49.3%)
	Female	50	53	8	111(50.7%)
	Total	95	111	13	219 (56.9%)

Data presented in Table 1 shows that the bystanders (36.4%), comprised of the largest proportion among those involved in any type of cyber bullying and the smallest proportion was the cyber bullies/cyber victims (15.8%). These findings differ from Hinduja and Patchin [78] study that found the cyber bullies had the biggest number (24%). There was a small disparity between the present study findings on the percentages and those in Tustin and Zulu [65] study that reported 34.4% on the cyber victims, 38.1% on the bystanders

and 23.3% in the cyber bullies. In the present study, the cyberbully typology with the highest percentage was the non-involved (43.1). However, Brack and Caltabiano [12] found that those who reported being both cyber bully/victims (62%) was the largest group, followed by individuals not involved (17%), cyber bullies (11%) and finally the cyber victims (10%). Likewise, other studies reported that cyber bullies/ cyber victims often represent the largest group in relation to cyber bullying [13, 34]. This contradict the present study findings that found the cyber bullies/ cyber victims group as having the least percentage (15.8%). The pronounced disparities in the percentages may be due to lack of a clear cut definition of cyber bullying. Whereby some studies dictate cyberbullying when it is above a certain number of online bullying acts [13, 34] whereas the present study considers it even on a single occurrence.

In the qualitative study, the respondents were asked to describe *what is cyber bullying*? This aimed at exploring the respondents understanding of what is cyber bullying and not necessarily the right definition of the term. The general consensus was that cyber bullying was bullying through the internet or the phones. When asked how many have experienced or engaged in cyber bullying behaviours within the last six months, about one of two (50%) of the focus group members indicated that they have experienced some form of cyber bullying whereas about six of ten (58.3%) had cyber bullied someone. About one of three (32%) of the group members indicated that they have witnessed someone being cyber bullied. Of those who indicated that they have both engaged and experienced were the fewest. These findings were consistent with the quantitative data that found the cyber bullies/cyber victims' typology to have the least proportion.

One of the features of the self-reported cyber bullying profile was gender. Data on Table 1 indicates that more males, 50.8%, were cyber perpetrators more than females, 49.2%. However, more females were cyber victims (52%) as compared to males (48%). There are more female bystanders (53%), as compared to males (47%). The non-involved and the cyber

bully/cyber victim groups had higher percentages of males than females. The percentages in all the typologies in this study are higher when compared to Hinduja and Patchin [79] findings that reported 36% female and 32 % males being cyber victims and for cyber bullies 18% males and 16% females. The present findings were consistent to other studies that that reported more females being victims and more males being cyber bullies [1, 79]. Conversely, other studies indicated that girls are more likely to cyber bully than boys [80] [81] or similar distribution of males and females in the different groups [12].

Data in Table 1 indicates that the 16-17 years' age cluster has the highest proportion in all the cyberbully typologies. This may signify that this is the peak age in cyber bullying among the respondents. Similarly, Xiao and Wong [17] indicated the age of 17 years as the peak age in cyber perpetration. Cyber bullying behaviours has been said to decline towards late adolescence. In the present study, among the groups of those who were involved in cyber bullying, the numbers dropped steeply from age 18 years and above. This was consistent with Xiao and Wong [17] study that found that cyber bullying tends to drop with increase in age as the adolescents tend to become young adult. The decrease in cyber bullying tendencies may be as a result of mental development and emotional maturity.

Data in Table 1 show difference in terms of percentages in the three age clusters in the different cyberbully typologies. The study sought to find out if the age difference was statistically significant across the cyberbully typologies. Kruskal-Wallis (a non-parametric test alternative for a one way between groups analysis of variance) was conducted to test the age difference. The test was preferred because it allows comparison of scores on a continuous variable for three or more groups. In this case, each of the cyberbully typology was compared across three age groups. Secondly, the data on the cyberbully typologies did not meet the assumption of normality for a parametric test. The findings are presented in Table 2.

Table-2: Kruskal-Wallis Test of Significance between Age and Cyberbully typologies

	Cyberbully typologies				
	Bully	Victim	Both Cyber Bully / Victim	Bystander	Non Involved
Chi-Square	2.819	7.878	6.047	1.454	4.836
Df	2	2	2	2	2
Asymp. Sig.	0.244	0.019	0.044	0.483	0.089

Note. Grouping Variable: age

The Kruskal-Wallis test revealed a statistically significant difference in being a victim across the three age clusters (group 1, n=167: 15years and below, group 2, n=185:16-17 years, group 3, n=33: 18 years and above), χ^2(2, n=385) =7.878, *p*=0.019 which is less than *p*=0.05. The older age cluster, 18 years and above,

indicating a higher median of (Md=231) than the other groups, 15 years and below (Md=196) and 16-17 years (Md=183).

Table 2 indicates a statistically significant difference in being both a cyber bully and cyber victim

across the three age clusters (group 1, n=167: 15 years and below, group 2, n=185:16-17 years, group 3, n=33: 18 years and above), χ^2(2, n=385) =6.047, *p*=0.044 which is less than p=0.05. The older age cluster 18 years and above indicating a higher median of (Md=206) than the other groups,15 years and below (Md=200) and 16-17years (Md=183). No statistically significant age difference was observed in being a cyber bully or a bystander.

Contrary, to the present study findings, Brack and Caltabiano [12] found that cyber bullying and cyber victimisation did not differ between individuals at the lower or higher end of the age range and that there was statistically no significant age difference. However, the study was dealing with an older group than the current study sample.

Demographic characteristics (time spent online, location and class) were also cross-tabulated with items on cyberbully typologies to display the similarities and disparity among the groups. A cross-tabulation was carried out to find out the distribution of the cyberbully typologies in terms of the location of the respondents' schools. Secondly, the cross tabulation indicated the amount of time the respondents from different locations and cyberbully typologies spent online. In addition, the cross tabulation indicated how students from different classes got involved in cyber bullying behaviours. The findings on the cross tabulation between cyberbully typologies, and time spent online / location; class and cyberbully typologies are indicated in Table 3.

Table-3: Cross Tabulation between Location, Time Spent Online, Class and Cyber Typology

Time Spent Online	location		Cyber typology				
			Bully n (%)	Victim n (%)	Both Cyber Bully / Victimn (%)	Bystander n (%)	Non-Involved n (%)
1hr	Location	Rural	3(42.8)	5(38.5)	0(0)	14(48.3)	23(56)
		Urban	4(57)	8(61.5)	3(100)	15(51.7)	18(43.9)
		Total	7(5.3)	13(9.6)	3(4.9)	29(20.7)	41(18.7)
2hrs	Location	Rural	11(57)	16(50)	7(53.8)	16(45.7)	24(49)
		Urban	8(42)	16(50)	6(46.2)	19(54.2)	25(51)
		Total	19(14.6)	32(23.7)	13(21.3)	35(25)	49(22.3)
3 & More	Location	Rural	52(50)	44(48.8)	15(33.3)	43(56.5)	65(50.3)
		Urban	52(50)	46(51.1)	30(66.7)	33(43.4)	64(49.7)
		Total	104 (80)	90(66.7)	45(73.7)	76(54.3)	129(58.9)
Total	Location	Rural	66(50.7)	65(48.1)	22(36)	73(52.1)	112(51.1)
		Urban	64(49.2)	70(51.9)	39(63.9)	67(47.9)	107(49.9)
		Total	130 (33.8)	135(35.1)	61 (15.8)	140(36.4)	219 (56.9)
	Class	Form 1	42(32)	45(33.3)	21(34.4)	44(31.4)	73(33.3)
		Form 2	47(36)	43(31.9)	11(18)	60(42.8)	86(39.2)
		Form 3	41(31.5)	47(34.8)	29(47.5)	36(25.7)	60(27.4)
		Total	130(33.8)	135(35.1)	61(15.8)	140(36.4)	219(56.9)

Note. n = frequency

One of the study assumptions was that more cyber bullying takes place in the urban areas because the adolescents have fewer chores at home and more time on the phones and computer than their rural counterparts. However, contrary to the prediction, the findings indicated that there are more cyber bullies and bystanders in the rural than in the urban. The *non-involved* (those who indicated not having either engaged, experienced or witnessed cyber bullying acts) were fewer in the rural as compared to the urban.

As shown on Table 3, those in the urban area spent more time online as compared to the rural, this was in line with the study assumption. When compared to the other groups the non-involved spent less time online, that is, *one hour or less*, daily. Most of the respondents who are in the cyberbullies/victims typology reported spending three hours or more online.

However, the highest number of those who spent three hours or more online were the cyber bullies. Mesch [82] suggests that the more time youths spend online the more the likely hood of engaging on cyber bullying maladaptive behaviours. Similarly, Healy [9] reported that high duration on online usage may give the adolescents an opportunity to engage in Cyber perpetration.

In the current study, a big proportion of the cyber victims (66.7%) spent more than three hours online on a daily basis. Marcum [83] suggest that the longer the duration of time spent online, interacting and sharing personal information the greater the likelihood of becoming a cyber victim. This is in line with the routine activities theory that indicates that increased use of the internet and social media on a daily basis among the "today's generation" has increased the opportunity of experiencing cyber bullying. This is because, those

who frequently use the cyber space to communicate with the peers has an increased likelihood to expose themselves to a motivated offender (cyber bully) and therefore more likely to be victimized.

When class level and cyberbully typology was investigated, the Form Two class had the highest number of cyber bullies and bystanders. At the same time, the Form Two class had the fewest number of cyber victims, cyber bullies/victims and also the non-involved. The Form Three class had the highest number of non- involved and cyber victims but least number of cyber bullies and bystanders when compared to the Form One and Two. These findings indicate that cyber bullying vary across grade levels. Similarly, when Kowalski and Limber [81] considered grade level, the

study found that the seventh and eighth grade students were more likely to be engaged in cyber bullying than the sixth graders. However, Zacchilli and Valerio [11] found no significant class difference between being a cyber victim or cyber bully. This variation may be because of the educational level included in the different study samples, where Zacchilli and Valerio [17] used college student and the present study used high school students.

To test the strength and direction of the relationship between cyberbully typologies and self-esteem, a parametric test, Pearson's Product-Moment Correlation Coefficient (PPMCC) was computed. The findings are presented on Table 4.

Table-4: The Relationship between Cyberbully Typologies and Self-esteem

	Global Self-esteem Correlation
Cyberbully	-.684**
Cybervictim	-.736**
Both cyberbully / cybervictim	-.474**
Cyber-bystander	-.531**
Non- involved	.783**

There was a strong negative relationship between being a cyber bully and global self-esteem ($r = -.684$, n=385, $p = .00$). The negative relationship was strongest between being a victim and global self-esteem ($r = -.736$, n=385, $p = .00$). These findings indicate that being a victim or bully is associated with development of low self-esteem of the adolescents and the association is higher on the former although the disparity was small. These findings are consistent with Brighi *et al*. [4] report that cyber bullies also possess self-esteem levels more closely related to pure cyber victims.

In addition, there was a strong relationship between the cyber bystander and global self-esteem ($r = -.531$, n=385, $p = .00$). Taking note that when interpreting the correlation coefficient, Pallant [84]

suggests that a range of r=.10 to .29 is considered small, r =.30 to .49 is medium and r =.50 to 1.0 is large. These findings imply that being a witness has a high influence on the self-esteem of the adolescents. However, the relationship between the non-involved and self-esteem scores, was strong but positive unlike the other cyberbully typologies. This may suggest that the more an adolescent is not involved the higher their self-esteem levels. Similarly, O'Brien and Moules [5] reported that the cyber victims were more affected in relation to self-esteem than those not involved in cyberbullying.

To investigate the influence of gender on cyberbully typology and self-esteem separate analysis was ran by splitting the file based on gender. The findings are presented on Table 5.

Table-5: Pearson's Product-Moment Correlation Coefficient between Cyberbully Typologies and Self-esteem Based on Gender

Gender	Typology	Global Self-esteem Correlations
Males	Bully	-.719**
	Victim	-.687**
	Both Cyber Bully / Victim	-.454**
	Bystander	-.464**
	Non Involved	.811**
Females	Bully	-.652**
	Victim	-.783**
	Both Cyber Bully / Victim	-.497**
	Bystander	-.593**
	Non Involved	-.758**

Note. n=385, males: n=193); ** Correlation is significant at the 0.01 level (2-tailed)

The strength of the relationship between female cyber victims and global self-esteem seem to be more than on the male cyber victims, *(r = -.783, n=192, p = .00)* and (r = -.687, n=193, *p* = .00), respectively. On other hand, the relationship was stronger between the male cyber bullies than on the female cyber bullies *(r = -.719, n=193, p = .00)* and (r = -.652, n=192, *p* = .00), respectively. When the coefficient of determination was computed, being a victim of cyberbullying helps to explain 54.2% of the variance in respondents' scores on global self-esteem, being a cyber bully helps to explain 46.8% of the variance in respondents' scores on global self-esteem. The coefficient was higher than Pallant [84] suggestion of 34% shared variance, deemed respectable in a lot of research in social sciences.

SUMMARY

The cyber-bystanders comprised of a large number of those involved in any type of cyberbullying and a small number indicated being involved as both cyberbullies/cybervictims. More males reported being cyberbullies than females. However, more females were cybervictims and also cyber-bystanders as compared to males. The Kruskal-Wallis test revealed a statistically significant age difference in being a victim or a cyberbully/cybervictim. However, there was no statistically significant age difference in being a cyberbully or a cyber-bystander. Contrary to the study prediction, the findings indicated that cyberbullying was prevalent in both the rural and the urban. When compared to the other groups the non-involved spent less time online, that is, one hour or less, daily. However, many of those who spent three hours or more online were cyberbullies. The study findings indicated that cyberbullying vary across grade levels with Form Two class having a large number of cyberbullies and cyber-bystanders, at the same time only a small number of the non-involved. The correlation between the different cyberbully typologies and the self-esteem was negative except for the non-involved where the relationship was strong but positive (*r* =0.891, n=385, *p* =0.00). Moreover, the negative relationship was strong between being a victim and global self-esteem (*r* = -0.736, n=385, *p*= 0.00). The coefficient of determination indicated that the variance in respondents' scores on global self-esteem was explained by 54.2% of being a cybervictim and 46.8% of being a cyberbully.

CONCLUSION

The more time adolescents spend online the more the likelihood of being involved in a certain role in cyberbullying and this varies across age, gender, grade levels and location (rural and urban settings). The negative correlation between self-esteem scores and all the cyberbully typologies except for the non-involved is an indication that involvement in cyberbullying

behaviours has an influence with development of low self-esteem.

RECOMMENDATIONS

High self-esteem has been said to be a psychological resource that promote many pro-social outcomes (such as popularity with peers and social competence) and academic achievement. This research also reinforces the fact that cyberbullying complaints should not be taken lightly but should be investigated. Those involved in cyberbullying should be given psychological help to avoid the development of low self-esteem. Especially, consideration should be given to those who are using retaliation as a coping strategy by focusing on enhancing better coping and social skills. Proper guidance should be given to adolescents to help them express themselves without hurting others and therefore creating healthy interpersonal relationships. In regard to research, studies in cyberbullying should not be limited to cyber victims and cyber bullies but should expand their scope to include the other cyberbully typologies.

Limitations of the study

The study had a few limitations in regard to methodology and conceptualization. This study provided important insight on the relationship between the variables however, the cross sectional design which was not experimental in nature limited the causality effect. Secondly, the sample for this study was limited to form (one, two and three) and was sampled from day high schools from one sub-county (Gilgil) in Kenya. Caution should be exercised when generalizing the findings of this study to other populations.

Suggestions for Further Studies

The present study exclusively classified the adolescents in the five cyberbully typologies but it is possible that there exists inter-relatedness among the groups, so further exploration was recommended.

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