

**ASSOCIATION BETWEEN BULLYING, MENTAL HEALTH AND SCHOOL
PERFORMANCE IN FORM ONE PUPILS IN SECONDARY SCHOOLS IN KISUMU**

**A research proposal in partial fulfillment for the degree of Masters of Medicine
(Paediatrics and Child Health), University of Nairobi.**

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This dissertation proposal is my original work and has not been presented for the award of a degree in any other university

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ABBREVIATIONS

CDC- Center for Disease and control

FGD- Focused Group Discussions

KNH - Kenyatta National Hospital

UON- University of Nairobi

WHO – World Health Organization

DEFINITIONS

Boy school: Refers to a school that admits only the male gender.

Bully: Refers to the person who perpetrates the above described act

Bullying: Bullying refers to repeated oppression either physical or psychological of a less powerful person by a more powerful person or group, the essential ingredient being an imbalance of power which makes possible the ill treatment of a victim.

Bully-victim: refers to the student who bully others and is also bullied by others.

Bystanders: Refers to those who witness bullying but are neither involved as bully nor the victim.

County: The largest administrative unit in certain countries. There are 47 counties in Kenya. Each county is subdivided into sub counties.

Cyber bullying: Involves bullying through the use of electronic avenues, such as instant messaging, e-mail, Chat rooms, websites, online games, social networking sites, and text messaging.

Girl school: Refers to a school that admits only female gender.

Household: A household consists of one or more people who live in the same house and also share at meals or living accommodation, and may consist of a single family or some other grouping of people.

Mixed school: Refers to a school that admits both male and female gender.

Pure bully: Refers to the students who bully others but is not bullied by others.

Pure victim: Refers to the students who are bullied but do not bully others.

School performance: Refers to the grades attained in school. More than 80% defined as excellent, 60-80% defined as good, 50-60% defined as pass and less than 50% defined as fail.

Victim: Refers to the person who is subjected to bullying.

ABSTRACT:

Background: There is a high prevalence of bullying in schools both in developed and developing world. Bullying in schools is associated with serious mental health problems, physical injury as well as poor school performance. This study seeks to establish the association between bullying, mental health and school performance.

Objectives: This study was aimed at determining the association between bullying mental health problems and school performance in the former Kisumu district (now Kisumu east, Kisumu west and Kisumu central sub counties).

Methods: The study was carried out as a school survey among form two pupils in the randomly selected schools in Kisumu district. Validated self-administered bullying questionnaire and mental health survey tool was administered to collect data on bullying and status of mental health. A questionnaire was also administered to collect data on school performance and socioeconomic status.

Results: The study was conducted in twenty two secondary schools in Kisumu. Four (4) schools were private while eighteen (18) were public. All the private schools were mixed. Of the eighteen (18) public schools, one (1) was a boy school, two (2) were girl schools while fifteen (15) were mixed schools. Four hundred and eleven (411) students were recruited, one hundred and ninety nine students (48.4%) were male while two hundred and twelve (51.6%) were female.

Prevalence of bullying was noted to be 53% among all the participants. Bullying was higher among the females (57.5%) as compared to the males (48.2%). Bullying was more prevalent in public schools as compared to private school with a p value of < 0.01 and odds ratio of five(5). The most common form of bullying among the female was exclusion from group of friends at 75.92% (n=144) against a prevalence of 29.65% (n=65) among the male gender.

There was no association between family size and bullying as well as family income and bullying. There was a strong association between bullying and poor mental health with a p value of < 0.01 . The higher the frequency of bullying the higher the likelihood of the students exhibiting signs of poor mental health. There was a strong association between bullying and mental health with both bullies and the bullied performing poorly as compared to those who did not participate in the act with a p value of < 0.01 and < 0.01 respectively.

1. Introduction

There is no universal definition of school bullying, however, it is widely agreed upon that bullying is a subcategory of aggressive behavior characterized by the following three minimum criteria:¹ (1) hostile intent (i.e., the harm caused by bullying is deliberate, not accidental),² (2) imbalance of power (i.e., bullying includes a real or perceived power inequity between the bully and the victim),² and (3) repetition over a period of time (i.e., more than once with the potential to occur multiple times).²

The following two additional criteria have been proposed to complement the above-mentioned minimum criteria: (4) victimization distress (victim suffer mild to severe psychological, social or physical trauma)² and (5) provocation (bullying is a part of progressive aggression motivated by perceived benefits of their aggressive behaviors).²

Some of these characteristics have been disputed (e.g. power imbalance: bullies and victims often report that conflicts occur between two equals), but nevertheless remain widely established in the scientific literature.¹

Power imbalance

Bullying is usually associated with an imbalance of power. A bully has a perceived authority over another due to factors such as size, gender, or age.³ Bullies are not identifiable by their appearance or group identification; rather we need to focus on how they act. The definition of bullying briefly describes actions that are exhibited by an individual that is playing the role of a bully.⁴ Boys find motivation for bullying from factors such as not fitting in, physical weakness, short temper, character of friends, and the clothes they wear. Bullying among girls, on the other hand, results from factors such as not fitting in, facial appearance, being overweight and academic status.⁵ In both sexes, a speech impediment of some sort (such as stutter) can also become the target of a bully.

Bullies

Proactive aggression is a concept for children to a bully among other children; each individual has a role to defend. If a child is labeled as aggressive it might be difficult to change their behavior. There are children that act proactively but only show aggression to defend themselves if they are provoked, then we have children who react aggressively if they are provoked but they tend to never be the ones to attack first. Developmental research suggests bullies are often morally disengaged and use egocentric reasoning strategies.⁶ Adolescents who experience violence or aggression in the home, or are influenced by negative peer relationships, are more likely to bully. This suggests that positive social relationships reduce the likelihood of bullying.⁷ The diagnosis of a mental health disorder is strongly associated with being a bully. This trend is most evident in adolescents diagnosed with depression, anxiety or ADHD.⁸ Bullying gets so

much more sophisticated and subtle in high school. It's more relational. It becomes more difficult for teens to know when to intervene; whereas with younger kids, bullying is more physical and, therefore, more clear-cut."⁹ Because of the low numbers of students who actually report incidents of bullying, thwarting the problem requires teachers to have a certain level of awareness, beginning with understanding bullying.

Individuals who choose to be a bully are not typically born with the characteristic. It is a result from the treatment they receive from authority figures, including parents. Bullies often come from families that use physical forms of discipline.¹⁰ This somewhat turns the tables on the bully, making them the victim. Unfortunately, this leads to a strategy of bully or be bullied.⁴

Bullies come in all shapes and sizes. Girls and boys are both bullies. Girls are more likely social bullies, spreading rumors, breaking up friendships, etc. Boys are more physical bullies, hitting, punching, and slapping.¹¹ Bullies are typically overly concerned about their appearance and the popularity standings. They have an urge to dominate, or to be in charge of others. Bullies are usually easily pressured by their peers and feel the need to impress them.¹² There are several different types of bullies; confident, social, fully armored, hyperactive, bullied bully, bunch of bullies, and a gang of bullies. The confident bully has a very high opinion of him/herself and feels a sense of superiority over other students. The social bully uses rumors, gossip, and verbal taunts to insult others. Social bullies are typically female, possess low self-esteem and therefore try to bring others down. The fully armored bully shows very little emotion and often bullies when no one will see or stop them. The hyperactive bully typically has problems with academics and social skills. This student will often bully someone then place the blame on someone else. A bullied bully is usually someone who has been bullied in the past or is bullied by an older sibling.

Victims

Victims of bullying typically are physically smaller, more sensitive, unhappy, cautious, anxious, quiet, and withdrawn. They are often described as passive or submissive. Possessing these qualities make these individuals vulnerable to being victimized. Unfortunately bullies know that these students will not retaliate, making them an easy target.¹⁰

Types of bullying

There are three basic types of bullying: physical, emotional/ psychological, and cyber. Cyber-bullying is becoming one of the most common types of bullying. While victims can experience bullying at any age, it is witnessed most often in school-aged children. With proper knowledge, preventative measures against bullying can be taken

Direct bullying is a relatively open attack on a victim that is physical and/or verbal in nature.¹³ Indirect bullying is more subtle and harder to detect, but involves one or more forms of relational aggression, including social isolation, intentional exclusion, rumor-spreading,

defamation of character or one's reputation, making faces or obscene gestures behind someone's back and manipulating friendships or other relationships.¹³

Physical bullying

Physical bullying is any unwanted physical contact between the bully and the victim. This is one of the most easily identifiable forms of bullying. Examples include: punching, pushing, shoving, kicking, inappropriate touching, pinching, use of available objects as weapons and Pulling of the hair

Emotional

Emotional bullying is any form of bullying that causes damage to a victim's psyche and/or emotional well-being. Examples include: spreading malicious rumors about people, keeping certain people out of a "group", getting certain people to "gang up" on others (could also be considered physical bullying), making fun of certain people, ignoring people on purpose – silent treatment or 'Sending to Coventry', harassment, provocation, pretending the victim is non-existent, saying hurtful sentences, directing foul language at the target, using derogatory terms or deriding the person's name, commenting negatively on someone's looks, clothes, body etc. – personal abuse, tormenting, mocking, teasing and belittling.

Cyber bullying

Cyber bullying is when a child, preteen or teen is tormented, threatened, harassed, humiliated, embarrassed or otherwise targeted by another child, preteen or teen using the Internet, interactive and digital technologies or mobile phones.¹⁴ This form of bullying can easily go undetected because of lack of parental/authoritative supervision. Because bullies can pose as someone else, it is the most anonymous form of bullying. Cyber bullying includes, but is not limited to, abuse using email, blogs, instant messaging, text messaging or via websites. Cyber bullying has become extremely prevalent in today's society. Since 95% of teens who use social media reported having witnessed malicious behavior on social media from 2009 to 2013,¹⁵

Sexual bullying

Sexual bullying is "any bullying behavior, whether physical or non-physical, that is based on a person's sexuality or gender. It is when sexuality or gender is used as a weapon by boys or girls towards other boys or girls although it is more commonly directed at girls. It can be carried out to a person's face, behind their back or through the use of technology."¹⁶

Bullying venues

Bullying occurs in and away from schools; however, the majority of bullying takes place in educational institutions. Bullying locations vary by context. For example, the playground is the

most dangerous area on the elementary level, followed by the outdoor recess area, hallways, indoor recess, and classrooms. In middle school, hallways were the most perilous location, followed by the lunchroom, outdoor recess areas, classrooms, indoor recess, and the front of the school. According to the U.S Department of education's national center for education statistics, more than 47% of kids reported getting bullied in hallways and stairway.¹⁷The reason students are mostly bullied in hallways and stairways is because that is where students spend the most time and is where they are least supervised. The bus stop or the bus ride to and from school is also a very hostile environment when it comes to kids that are bullied because it is one of the places with the least supervision.¹⁸

Warning signs of bullying

There are warning signs for everyone involved in bullying. Whether a pupil/student is being bullied, bullying others, or witnessing it, there are signs to look for. Parents should always keep the lines of communication open by starting conversations about daily life and feelings with questions like: What was one good thing that happened today? What is your lunch time like at your school? Who do you sit with? Keep the questions open-ended so your child can describe his or her day.¹⁹⁻²⁰

Signs that a child is being bullied include: Unexplainable injuries, Conditions such as anxiety and post-traumatic stress manifesting in the child's behaviour, lost or destroyed clothing, change in eating habits, declining grades, continuous school absences, self-injury, suicidal tendencies.

Signs that a child is bullying others include: Getting into physical or verbal fights, getting sent to the principal's office frequently, having friends who bully others, becoming increasingly aggressive in normal day activities

Signs that a child has witnessed bullying include: Poor school behavior, emotional disturbance, depression, post-traumatic stress, suicidal tendencies

Effects

The long-term effects of school bullying are numerous, including but not limited to sensitivity, anxiety and depression.²¹ Recent statistics suggest that the majority of students will experience bullying at some point in their academic careers. Starting in the early 21st century, increasing attention has been given to ensure teachers and parents understand and recognize the signs of bullying, (in both the bully and the victim), and are equipped with strategies and tools to address the problem. School bullying may cause a significant drop in victims' grades²² and may lead them to develop suicidal thoughts.²³

Dombeck defines some common short-term and long-term effects of bullying. These include, but are not limited to:²⁴

Short-term (Victim): Depression, suicide ideation (many feel unwanted in life and that they should not live), anxiety, anger, learned helplessness, significant drop in school performance and excessive stress

Short-term (Bystander): Witnessing bullying incidents can produce feelings of anger, fear, guilt, and sadness in observers. Bystanders who witness repeated victimization of peers can experience negative effects similar to the victimized children themselves.¹³

Long-term (Victim): Abiding feelings of insecurity, lack of trust, extreme sensitivity (hyper vigilance), mental illness such as psychopathy and post-traumatic stress disorder, a desire for vengeance that accompanies the above, and sometimes leads into the victim tormenting others themselves.

Long-term (Bully): Pure bullies did not show problems with emotional functioning as adults. But they did show increased risk of developing antisocial personality disorder. People with this disorder have little empathy and few scruples about manipulating others for their own gain. The disorder is linked with a greater risk of becoming a criminal or committing domestic violence against their spouses and children. Most bullies did not go on to have the disorder, Copeland said, but they were more likely to develop it than other groups.²⁵

2. Literature review

According to a widely accepted definition of bullying, a child is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more peers. Negative action is when a person intentionally inflicts injury or discomfort on another individual through physical contact, through words, or in other ways. Bullying is a specific type of aggression in which the behavior is intended to harm or disturb, the behavior occurs repeatedly over time and there is an imbalance of power, with a person or group perceived as more powerful attacking one perceived as less powerful. This asymmetry of power may be physical or psychological, and the aggressive behavior may be verbal, physical, or psychological.²⁸⁻³⁰ Individuals may be bullies (perpetrators), victims, or bullies/victims. Boys are more likely to be physically bullied while girls are more likely to be targets of rumors spreading and sexual comments. Bullying with physical means is less common among girls who typically use more subtle and indirect ways of harassment such as excluding someone from the group, spreading of rumors, and manipulation of friendship relations. Such forms of bullying can certainly be as harmful and distressing as more direct and open forms of attacks.^{27,28,31}

More recently, a new mode of bullying has emerged, known as cyber bullying.³²⁻³³ Cyber bullying involves bullying through the use of electronic venues, such as instant messaging, e-mail, Chat rooms, websites, online games, social networking sites, and text messaging.

In his 1993 book, *Bullying at school: What we know and what we can do*, Dr. Olweus identifies characteristics of students who are most likely to be bullies and those that are most likely to be victims of bullying. Bullies tend to exhibit the following characteristics: 2They have a strong need to dominate and subdue other students and to get their own way. Are impulsive and are easily angered. They are often defiant and aggressive towards adults, including parents and teachers. They Show little empathy toward students who are victimized. If they are boys, they are physically stronger than other boys.

The typical passive or submissive victims, according to Olweus' research, generally have some of the following characteristics: Are cautious, sensitive, quiet, withdrawn and shy. They are often anxious, insecure and unhappy and have low self-esteem. They are depressed and engage in suicidal ideation much more often than their peers. They often do not have a single good friend and relate better to adults than to peers. If they are boys, they may be physically weaker than their peers.

In other studies several other factors have been associated with being a bully, a victim and bully/victim. Children who come from families with lower socioeconomic status and whose parents have lower level of education are more likely to be bullies.³¹ Children who have; general poor health, chronic diseases, poor mental health status, physical abnormalities, poor academic achievement and poor social interaction skills are more likely to be victims.^{31,34-42}

Psychological research has debunked several myths associated with bullying, including one that states bullies are usually the most unpopular students in school. A 2000 study by psychologist Philip Rodkin, involving fourth-through-sixth-grade boys found that highly aggressive boys may be among the most popular and socially connected children in elementary classrooms, as viewed by their fellow students and even their teachers.³¹ Another myth is that the tough and aggressive bullies are basically anxious and insecure individuals who use bullying as a means of compensating for poor self-esteem. Using a number of different methods including projective tests and stress hormones, Olweus concludes that there is no support for such a view. Most bullies had average or better than average self-esteem.²⁷⁻²⁸

Studies have shown a high prevalence of bullying in schools. The prevalence of bullying is higher in the developing world as compared to the developed world. Four studies done in Africa showed a prevalence varying from 31% to 82%.⁴⁵⁻⁴⁸ Five studies done in Europe and United States of America showed a prevalence varying from 10.5% to 30%.⁴⁷⁻⁵⁴ Ndeti et al showed that prevalence of bullying in schools in Nairobi varies from 63-82% while Ochura Joseph et al showed a prevalence of 31-56% in Kisumu east district.⁴⁵⁻⁴⁶

There is a higher prevalence of bullying in boarding schools as compared to that in day schools. This is attributable to more time being spent with peers as well as other social factors that may lead to some of the children being admitted into boarding schools. Majority of bullying occurs in classrooms, hallways and lunchrooms as compared to that on the way to school.³³

Ochura et al in a study done in Kisumu district established that out of the physical, verbal, relational and technological / cyber types of bullying, verbal type of bullying was the most common. By type of school, verbal type of bullying was still the most common in all the three categories of schools ie Boy school, Girl school and Mixed schools. Concerning forms of physical bullying, taking victims personal items was the most common, while name calling was concluded as the major problem of verbal bullying. Group isolation and spreading rumors were the worst forms of relational bullying whereas use of visual messages / pictures was concluded as the most common forms of technological bullying.⁴⁵

Bullying has been shown to have various effects on bullies, victims and bystanders. The effects of bullying on victims include poor school performance, physical injury, difficulty concentrating in class, physical symptoms (eg, nausea, anorexia, insomnia), symptoms of anxiety or depression, poor self-esteem, and high rates of school absence.^{32, 52-54} Health consequences of peer victimization include higher prevalence of physical complaints and psychosocial maladjustment⁵⁵⁻⁶⁷ with fairly similar effects between countries.⁶⁴ Williams et al drew attention to the importance of dose, and suggested that higher frequencies of victimization were associated with greater risk of health problems.⁶⁸ Persistent victimization over an extended time period also predicts more serious health problems.⁶⁹ In a meta-analysis of 6 longitudinal and 24 cross sectional studies it was shown that victims of bullying had a higher incidence of psychosomatic disorders as compared to the non-bullied students.⁵¹ Victims have also been shown to suffer

more from depression and suicide ideation as compared to students not affected by bullying.^{27,73} Bullies, however, often feel powerful and effective. In contrast to the situation in childhood, the long-term outcome at age 30 years for bullies themselves is especially poor. They are more likely to be incarcerated and are less likely to be employed, married, or in other stable adult relationships than are their peers. Research by the Secret Service and the U.S. Department of Education involving 37 school shootings, including Columbine, finds that about two-thirds of student shooters felt bullied, harassed, threatened or injured by others. Most school bullying cases do not lead to school shootings, but bullying is a serious and more common problem than previously recognized that can leave emotional wounds long after the physical wounds have healed.⁷¹

Neil Tippett and Dieter Wolke, using an inclusive measure of sibling aggression, investigated the prevalence of sibling aggression and association with family and household characteristics. They also studied the relationship between sibling aggression and peer bullying. The findings were striking. The study showed that harsh parenting, large family size, male siblings and poor economic status of the family was associated with increased risk of sibling aggression. Sibling aggression was also associated with peer bullying. The sibling who was victimized had a higher risk of being bullied by peers while the sibling who perpetrated the aggression had a higher risk of becoming a bully. They concluded that due to the adverse physical and mental health effects of both sibling aggression and peer bullying, it is important to take steps to minimize sibling aggression which in turn will minimize peer bullying. The role of the family is therefore important.⁷²

William E et al in a prospective study showed that being a victim of bullying predicted a higher increase of CRP levels (an inflammatory marker) into adulthood. There was an increase in CRP levels of all subjects into adulthood. The increase was more in the victims of bullying compared to the subjects not involved in bullying and those who were bullies. The increase was least among the bullies. They had controlled for body mass index, substance use, physical and mental health status, and exposures to other childhood psychosocial adversities. This implies that bullying affects mental health that is likely to lead to an increase in inflammatory markers.⁷³

In multivariate models adjusted for age and social class, Pernile et al found that adolescent victims of bullying used medicine for pains and psychological problems more often than did adolescents who were not bullied. The increased odds of using medicine were not explained by the higher prevalence of symptoms among the bullied children.⁷⁴

Studies done in the developed world established that bullying leads to poor school performance^{32-33,75-76}. Both the victims and bullies perform poorly as compared to students not involved in bullying. Their performance in mathematics and language being the most affected.³³ Victims perceive the school environment as unsafe and have difficulty concentrating in class.⁷²

Literature search revealed no paper on relationship between bullying school performance and mental health problems in Kenya and in Africa.

Problem statement

Bullying behaviour has been shown to be rampant in schools both in the developed as well as the developing countries. The prevalence of bullying is higher in the developing world as compared to that in developed world.⁴⁵⁻⁵⁴ This may be due to extensive research done in the developed world that has led to formulation of policies and interventions to minimize bullying in schools. Bullying has been shown to have various detrimental effects on the victims, these include poor school performance, physical injury, difficulty concentrating, physical symptoms (eg, nausea, anorexia), symptoms of anxiety or depression, poor self-esteem, suicide ideation and high rates of school absence.^{32,52-54}

The study seeks to establish the relationship between school bullying, school performance and poor mental health.

2.1 Study justification and utility

Various studies done in the western world have shown that bullying leads to poor school performance and mental health problems in victims, the bullies also perform poorly in school. There is no study done to analyze the association between school bullying, mental health problems and school performance in Kenya or in Africa. This study seeks to establish the association between bullying, mental health and school performance. If this study establishes that there is a strong association between bullying poor school performance and or mental health problems, the data can be used to advise various stakeholders to institute measures to minimize this practice in order to improve mental health and school performance of the students.

2.2 Objectives

2.2.1 Primary objectives

1. To establish the association between school bullying, mental health problems and school performance among form one pupil in Kisumu.

2.2.2 Secondary objective

1. To determine socio demographic factors for example family size, associated with school bullying.
2. To determine the association between school bullying and school performance among the bullies and the bullied.

3. Materials and methods

3.1 Study design:

A quantitative method was used in this study. Descriptive cross sectional study design was used.

3.2 Study population:

Form 2 pupils in the randomly selected schools in Kisumu district.

3.3 Study location

Study was conducted in the former Kisumu district now divided into Kisumu central, Kisumu East and Kisumu west sub counties. Kisumu district is located in the western part of Kenya. According to data obtained from county education office in December 2014, there are 75 secondary schools in this area, 60(80%) are public schools while 15(20%) are private schools. All private schools are mixed (enrolls both boys and girls). Of the public schools 52 (86.7%) are mixed, 3 (5%) are boy schools and 5(8.3%) are girl schools.

3.4 Study period

Study was conducted in February 2016 for one month.

3.5 Selection and enrolment of participants

3.5.1 Inclusion criteria

1. Form 2 students in the randomly selected schools.

3.5.2 Exclusion Criteria

1. Those who have not consented.
2. Those who joined form 2 from other schools.
3. Those who had repeated form 2.

3.6 Sample size calculation

A previous study by Ochura J et al (2014) has shown a prevalence of bullying in Kisumu of 50%. We calculate the outcome variable as the population level difference in school performance $d = p_1 - p_0$. The sample size that will be powered at 80% to detect a difference d of 5% between the population of bullied students and that of students not exposed to bullying, at a 5% level of significance (α), is given as

$$n = \frac{\{Z_{\beta}\sqrt{p_1 \cdot (1 - p_1)} + Z_{\alpha}\sqrt{p_0 \cdot (1 - p_0)}\}^2}{(p_1 - p_0)^2} \dots (\text{equation 1})$$

where

Z_{α} is the percentage point of the normal distribution corresponding to the (two-sided) significance level,

Z_{β} is the one sided percentage point of the normal distribution corresponding to (100% - the power of the study),

p_0 is the average performance in the group exposed to bullying, measured as a percentage of total obtainable score across the year. We estimate that the performance would be approximately 47.5%, as in the absence of existing studies this would maximize variance in each group.

p_1 is the average performance in the group not exposed to bullying, measured on a similar scale as p_0 above. For the sample size calculation this is given as 52.5%

$$n = \frac{\{0.85\sqrt{0.525 \cdot (1 - 0.525)} + 1.96\sqrt{0.475 \cdot (1 - 0.475)}\}^2}{(0.525 - 0.475)^2} = 197$$

It is anticipated that there will be a moderate cluster effect from selecting individuals in same schools. To adjust for this we adjust the effective sample size by a design effect of 1.5 to give an expected sample size of $197 * 1.5 = 295.5$.

Adjusting upwards to cater for a 5% non – response rate, gives a working sample size of $295.5 * 105/100 = 311$ students to be surveyed across all the sampled schools.

3.7 Sampling technique

There was a two stage cluster sampling; the first stage was to select schools to be included in the study, the second stage was to select students in each school to be included in the study.

School selection

Schools were grouped into 2 categories namely public schools (n=60) and private schools (n=15). For the private schools, the name of each school was inscribed on separate pieces of paper. 85 papers with no names were folded and put into a container together with the papers with school names written on. A paper was picked from the container one by one until five schools were picked (30% of schools), if an empty paper was picked it was returned back into the container, if a paper with school name was picked, it was kept aside and was selected as the school of study. Public schools were further sub-categorized into mixed schools (n=52), girl schools (n=5) and boy schools (n=3). Random sampling using the same format as in private schools above was performed for public mixed schools e.g 52 papers with school names and 294 empty papers were put into a container and a paper drawn at a time until fifteen schools were picked (30% of schools). 1 boy school was picked using the same above format and included in the study (n=1). Girl schools were subjected to random sampling until two schools were picked using similar format as in private schools and public mixed schools (n=2). A total of 22 schools were included in the study; private schools (n=4), public schools (n=18). Written permission to conduct the study was obtained from the national commission for science technology and innovation (NACOSTI), county education office. Verbal permission was sought from the principles or deputy principles of the individual schools. Verbal consent was sought from the parents and written assent from the students who participated in the study.

Student selection

Those who joined form two from other schools and those who repeated form two were excluded from the study. Systematic random sampling was used to select students from individual schools who participated in the study. All the parents of the selected students gave verbal consent over the phone and all the selected students gave written assent before administration of the questionnaire.

3.8 Data collection, management and analysis.

3.8.1 Recruitment of research assistants.

Eight research assistants were recruited and trained. The research assistants were Form four graduates from the location of the study. A standard operation procedure manual was prepared that guided the training and the general conduct of the research assistants during the study. The research assistants were trained using audiovisual technique. The training lasted 3 hours. The main areas of training were on sampling techniques, administering and understanding of the questionnaires and maintaining confidentiality.

3.8.2 Pretesting of questionnaires.

7% of all the questionnaires were pretested in a school that was not participating in the study before the actual study to help confirm validity and completeness of the questionnaires. Attached on page 29-47 please find the questionnaire that was used in the study.

3.8.3 Data collection.

a) Administration of questionnaires.

Following selection of the students who participated in the study, phone calls were made to their parents by the researcher and or research assistants providing adequate information on the study, all the parents of the selected students gave verbal consent via the phone. After obtaining verbal consent from the parents, written assent was obtained from each individual participant.

Questionnaires were administered to the participants. There was one questionnaire with four separate topics namely;

1. Validated modified olweus bullying questionnaire that was used to collect data on history of bullying in Form one.
2. Validated mental health questionnaire that was used to collect data on the state of mental health for the last six months.
3. Questionnaire to collect data on the socio economic status of participants.
4. Questionnaire to collect data on school performance in term one, term two, term three and the average score per subject for the last one year.

3.9 Data management

After data collection, the researcher and the research assistants met every evening to go through the questionnaires and examine the completeness of each individual questionnaire. The data was coded and keyed in in excel sheet each evening. Hard copies of were organized into clearly labeled folders and stored in locked long-term storage units. Access to these files was limited to relevant project staff and authorized persons only. An electronic copy of the data was kept in the above-mentioned databases, which is only accessible to relevant staff and was password protected. Research project data that is no longer required following the end of the data retention default period (duration of Master of Medicine project, examination and defense) will be destroyed, subject to the demands of the publication cycle, continuing or follow-on projects or the requirements of any funder, sponsor or publisher. All original hard-copy project data and documentation will be shredded and electronic data will be deleted from computer memory and CD or DVDs destroyed.

3.10 Data analysis

The categories of variables assessed for and collected was as follows

Quantitative variables

Data collected through PDAs was input directly into Episurveyor® software, and verification was performed on a random sample of 5% of the questionnaires keyed in. Initial analysis will involve tabulation and summary of baseline demographic data. Bivariate analysis was performed using Stata® software version 11, and involved comparing the primary outcome variables (school performance, mental health) to the main explanatory variable (occurrence of bullying) and the cluster robust crude association was reported as Odds Ratios (ORs). In order to investigate and adjust for possible effect modifiers, a multivariable logistic regression was performed and both the (cluster robust) crude and adjusted ORs and their 95% Confidence Intervals were presented.

4. RESULTS

The study was conducted in twenty two secondary schools in Kisumu. Four (4) schools were private while eighteen (18) were public. All the private schools were mixed. Of the eighteen (18) public schools, one (1) was a boy school, two (2) were girl schools while fifteen (15) were mixed schools. Four hundred and eleven (411) students were recruited, one hundred and ninety nine students (48.4%) were male while two hundred and twelve (51.6%) were female.

4.1 Bullying

a) Prevalence of bullying

As shown in table one, two hundred and eighteen students were bullied(53.04%). Of the bullied students ninety six (48.2%) were males while one hundred and twenty two (57.5%) were females. The students who were bullied but did not bully others were one hundred and fifty seven (38.2%) while those who were bullied and also bullied other students were sixty one (14.8%). Twenty seven students were pure bullies (6.6%). One hundred and sixty six students were neither bullied nor did they bully others (40.3%). Table 2

Table 1: Prevalence of bullying among the male and female

Gender	Number bullied	Percentage	Number not bullied	Percentage	Total
Male	96	48.2%	103	51.8%	199 (48.4%)
Female	122	57.5%	90	42.5%	212(51.6%)
Total	218	53.0%	193	(47.0%)	411(100%)

Table 2: prevalence of bullying

	Number of students	Percentages
Pure victims	157	38.2%
Pure bullies	27	6.6%
Bully victims	61	14.8%
Those not involved	166	40.3%
Total	411	100%

b) Types of school and bullying

As shown in table three, prevalence of bullying in private schools was 23% while that in public school was noted to be 58.7%. In the public schools prevalence of bullying was noted to be 63.4% in girl schools, 52.3% in boy schools and 59.9% in mixed schools.

Table 3: Types of school and bullying

School type	Not bullied N	Not bullied %	Bullied N	Bullied %
Private mixed	50	77.0%	15	23.1%
publicgirl	26	36.6%	45	63.4%
boy	42	47.4%	46	52.3%
mixed	75	40.1%	11	59.9%
Total	193	47.0%	218	53.0%

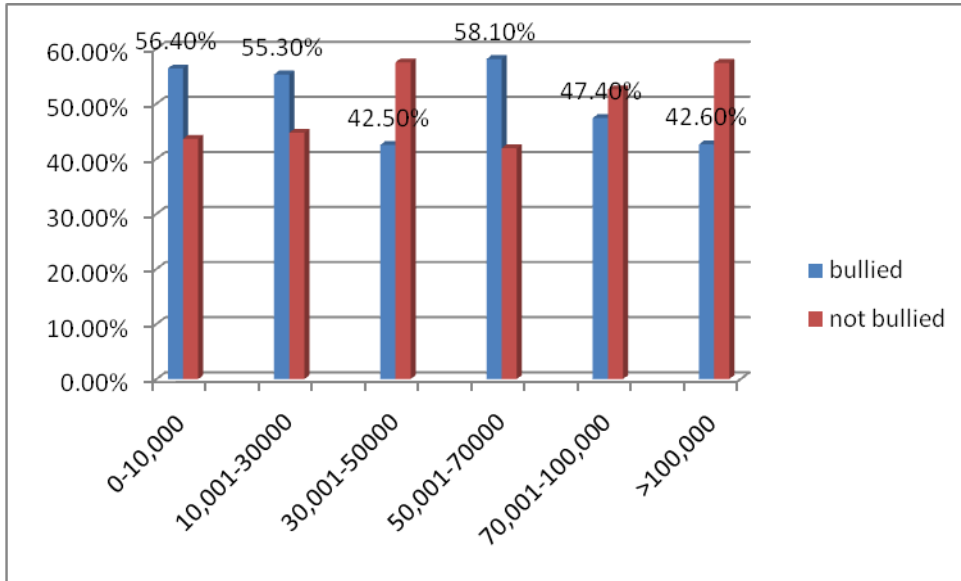
c) Family income

As shown in table four majority of the sampled students were from families with monthly income of less than ten thousand Kenya shillings (10,000 ksh) while the minority were from families with monthly income of seventy thousand and one Kenya shillings to one hundred thousand Kenya shillings. As shown in figure one, the students who came from families with low income were more likely to be bullied as compared to those who came from families with higher income.

Table 4: family income vs bullying

Income ksh	Bullied(n)	Bullied(%)	Not bullied	Not bullied	Total no.	Total (%)
0-10,000	101	56.4	78	43.6	179	43.5
10,001-30,000	42	55.3	34	44.7	76	18.5
30,001-50,000	31	42.5	42	57.5	73	17.8
50,001-70,000	25	58.1	18	41.9	43	10.5
70,001-100,000	9	47.4	10	52.6	19	4.6
>100,000	9	42.6	12	57.4	21	5.1

Figure 1: prevalence of bullying vs family income



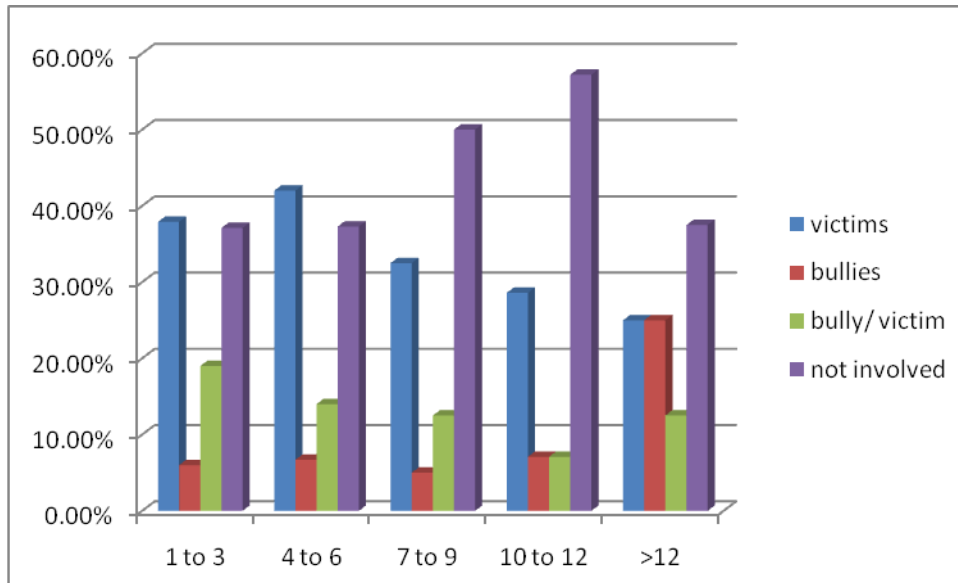
d) Relationship between family size and bullying

As shown in table five majority of the sampled students came from families with four to six children (4-6) while only eight participants were from families with more than twelve (12) children. As shown in figure two, students from families with less number of children were more likely to be victims of bullying as compared to students from families with a larger number of children. It is also noted that students from a larger number of children were more likely to be perpetrators of bullying as compared to students from families with fewer number of children.

Table 5: family size and bullying

no. of children	victims	bullies	bully/ victim	not involved	total
1 to 3	44	7	22	43	116
4 to 6	81	13	27	72	193
7 to 9	26	4	10	40	80
10 to 12	4	1	1	8	14
>12	2	2	1	3	8
Total	157	27	61	166	411

Figure 2: Relationship between family size and bullying



e) Frequency of bullying

As shown in table six, the frequency of bullying was similar in both gender with the highest number of both male and female reporting as having been bullied once or twice. In both gender the least frequency of bullying was several times a week.

Table 6: Frequency of bullying in male and female gender

Gender	Frequency of bullying				Total
	Once or twice	2 or 3 times a month	Once a week	Several times a week	
Male	57(28.64%)	24(12.06%)	10(5.03%)	5(2.51%)	96
Female	74(34.91%)	19(8.96%)	17(8.02%)	12(5.66%)	122
Total	131(60.1%)	43(19.7%)	27(12.4%)	17(7.8%)	218

f) Forms of bullying

As shown in table seven, forms of bullying was noted to be similar in both gender with the exception of; isolation and exclusion from group of friends which was noted to be more prevalent among the female gender at 75.92%(n=144) against a prevalence of 29.65%(n=65) among the male gender and being hit, kicked, shoved or slapped which was noted to be more prevalent among the female.

Table 7: Frequency of different types of bullying among male and female students

Gender	Forms of bullying							
	Tease d, mean names	Damage to propert y	Isolati on	Threaten ed	Racial	Sexual comment/ges tures	Physical bullying	Cyber bullyi ng
Male	85(38.9%)	70(35.2%)	65(29.6%)	58(29.2%)	39(19.6%)	34(17.1%)	0	34(17.1%)
Female	82(37.6%)	85(38.9%)	144(75.9%)	56(26.4%)	48(22.6%)	38(17.9%)	59(27.8%)	38(17.9%)

4.2 Association between type of school and bullying

As shown in table eight, the students from public schools were more likely to be bullied as compared to students from private school. Dunn's Pairwise Comparison test was used to compare bullying in private and public school. A confidence interval of 95% was assumed. Students from public schools were five (5) times more likely to be bullied as compared to those from private schools with a p value of less than 0.001.

As shown in table nine, students from girl schools and those from boy schools had similar bullying risk. Dunn's Pairwise Comparison test was used to compare bullying in girl and boy school. A confidence interval of 95% was assumed. Students from girl schools were one point four (1.4) times more likely to be bullied, however there was no significance level with a p value of 0.49.

Table 8: association between bullying and school type

School type	Not bullied	Bullied	Odds ratios	P-value
Private Schools	50 (76.92%)	15(23.08%)	0.30 (0.17,0.53)	p<0.001
Public mixed Schools	75(40.11%)	112(59.89%)	1.50(1.11, 2.00)	p<0.001

Table 9: association between bullying and school type

	Not bullied	Bullied	P-value
Girls Schools	26(36.62%)	45 (63.38%)	
Boy Schools	42(47.43%)	46(52.27%)	p<0.49

4.3 Association between bullying and family size

As shown in table ten, students who come from families with four to six children (4-6) and ten to twelve children (10-12) were less likely to be bullied as compared to those who come from families with one to three children (1-3) with a p value of 0.02 and 0.02 respectively. There was no evidence of reduced risk of bullying in the students who come from families with seven to nine (7-9) and more than twelve (>12) children as compared to those who come from families with one to three children with a p value of 0.13 and 0.98 respectively. In the above analysis 95% confidence interval was assumed.

Above analysis was repeated to investigate the association between being a bully and family size. As shown in table eleven (11) there was no association between being a bully and family size.

Table 10: association between being bullied and no of siblings

no. of children	bullied	Not bullied	Odds ratio	P value
1 to 3	66	50		
4 to 6	108	85	0.60 (0.39 to 0.91)	0.016
7 to 9	36	44	0.60 (0.30 to 1.17)	0.13
10 to 12	5	9	0.19 (0.04 to 0.95)	0.02
>12	3	5	0.98 (0.16 to 6.05)	0.98

Table 11: association between being a bully and family size

no. of children	bullied	Not bullied	Odds ratio	P value
1 to 3	66	50		
4 to 6	108	85	0.60 (0.39 to 0.91)	0.016
7 to 9	36	44	0.60 (0.30 to 1.17)	0.13
10 to 12	5	9	0.19 (0.04 to 0.95)	0.02
>12	3	5	0.98 (0.16 to 6.05)	0.98

4.4 Association between family income and bullying

As shown in table twelve, there was no association between family income and being bullied. In this analysis Wald test was used to compare family income and being a victim of bullying. 95% confidence interval was assumed.

Table 12: association between family income and being bullied

Income ksh	Bullied(n)	Bullied(%)	Not bullied	Not bullied	Odds ratios	P values
0-10,000	101	56.4%	78	43.6%		
10,001-30,000	42	55.3%	34	44.7%	1.0(0.6-1.7)	1.0
30,001-50,000	31	42.5%	42	57.5%	0.5(0.3-0.9)	0.03
50,001-70,000	25	58.1%	18	41.9%	1.2(0.6-2.3)	0.63
70,001-100,000	9	47.4%	10	52.6%	0.7(0.3-1.8)	0.45
>100,000	9	42.6%	12	57.4%	0.6(0.2-1.5)	0.24

4.5 Effect of bullying on mental health

As shown in table thirteen there was a strong association between bullying and poor mental health, the higher the frequency of being bullied the higher the risk of having poor mental health. In this analysis Wald test was used to compare frequency of bullying and poor mental health. 95% confidence interval was assumed. The results yielded a Wald chi square value of 28 and a p value of <0.01.

Table 13: frequency of being bullied and poor mental health

How often have you been bullied	Good mental health	Poor mental health	Odds ratios	P values
Not been bullied	169(87.6%)	24(12.4%)	1.0	
Once or twice	99(75.6%)	32(24.6%)	2.3(1.3-4.1)	<0.01
2 or 3 times a month	29(67.4%)	14(32.6%)	3.4(1.6-7.5)	<0.01
Once a week	16(59.3%)	11(40.7%)	4.8(1.9-12.0)	<0.01
Several times a week	8(47.1%)	9(52.9%)	7.9(2.6-23.8)	<0.01
Total	322(78.3)	89(21.7%)		

4.6 Effect of bullying on school performance

In this analysis, Wald test was to done to analyse the associations between the different categorical and continuous variables. In this test, a 95% confidence level was assumed.

A Wald test was used compare the association between being bullied (a categorical variable) and academic performance (a continuous variable) of the participants. The results yielded a Wald chi-square value of 26.85 (12 degrees of freedom) and a p-value of < 0.01 . This therefore implies that in the population there is strong evidence that bullying is associated with poor academic performance.

Similarly, the Wald test was used to compare the association between taking part in bullying (a categorical variable) and academic performance (a continuous variable) of the participants. The results yielded a Wald chi-square value of 26.94 (15 degrees of freedom) and a p-value of < 0.01 . This therefore implies that in the population there is strong evidence that taking part in bullying is associated with poor academic performance.

5. Discussion

There is a high prevalence of bullying in secondary schools in Kenya. This study demonstrated a prevalence of 53.04% (n=218), see table 1. The prevalence of bullying was higher in public schools as compared to private schools. This finding correlates with earlier studies done in Kenya that showed a prevalence varying from 30-82%.⁴⁵⁻⁴⁸ Bullying was more prevalent in public schools than in private schools with a prevalence of 23% in private schools and 58.7% in public schools. Among the public schools bullying was most prevalent in girl schools at 63.4% followed by mixed schools at 59.9% and boy schools at 52.3%. Study done in Kisumu in 2014 Ochura J. does not correlate with this finding;⁴⁵ it reports the highest prevalence in mixed schools at 42.2% followed by boy schools at 32.2% and girl schools at 28.6%. The variation in the finding may be due to the difference in the profile of participants as well as the research tool. In the prior study students in form one and form two were included while this study only investigated bullying in form one. It is possible that the prevalence of bullying decreases as students move from a lower class to a higher class. The research tool in the prior study only asks question in relation to bullying in the last six months while this study was investigating bullying in relation to the last one year. It is also possible that the female students are getting more involved in bullying.

The frequency of bullying was the same across both genders with majority having been bullied only once or twice while a minority was bullied several times a week (table 6). This finding correlates with earlier studies done in Kenya that demonstrated that frequency of bullying was less among the majority of the bullied students.⁴⁵

Patterns of bullying was noted to be similar in both gender with the exception of; isolation and exclusion from group of friends, which was noted to be more prevalent among the female gender at 75.92% (n=144) against a prevalence of 29.65% (n=65) among the male gender and being hit, kicked, shoved or slapped which was noted to be more prevalent among the female (27.5% against none in males-table 7). This corresponds to earlier studies with the exception of physical bullying that was shown to be more prevalent among the male.²⁷ It is not clear why no male participant in this study reported being physically assaulted.

There was strong association between bullying and poor mental health. The students who were bullied more frequently had a higher likelihood of developing mental health problems as compared to those who were bullied less frequently and those who were not bullied at all (table 13). This finding correlates with earlier studies that supported the same finding.⁶⁸⁻⁶⁹

Being a bully as well as being a victim of bullying is strongly associated with poor school performance with a p value of <0.01. This finding correlates with other studies that showed being involved in bullying whether as a bully or as a victim was associated with poor school performance.^{32-33,75-76}

There was no association between bullying and number of children in a household. This did not correlate with earlier studies that showed a higher prevalence of bullies among students who come from larger families. The earlier studies including one by Tjepet et al concluded that Household and family Characteristics, including a large family size, male siblings, and financial difficulties were associated with greater rates of sibling aggression. Sibling aggression was also related to peer bullying.⁷²

Strengths and weaknesses

Weaknesses

1. The Study relied on self-reported data with no accompanying measures of data accuracy thereby potentially affecting outcomes especially regarding the prevalence of bullying.

Strength

1. Large sample size and good representation of the school categories. This therefore implies that the study can be generalized to the population

Conclusions

1. Bullying in schools is strongly associated with poor school performance among both the victims and the perpetrators.
2. Bullying is associated with poor mental health among the victims. Poor mental health (depression and anxiety) can have long lasting effects into adulthood and may even lead to suicide. It is important for the stakeholders especially the health professionals and those in education sector to come together and draft policies that will help minimize bullying in schools.

Recommendation

1. Stake holders in school and health to come together and formulate policies to minimize bullying.
2. Lessons to be introduced in schools to equip students with inter personal relation skills and the negative effects of bullying on colleagues.

Control of errors and biases

1. The Principal Investigator assessed the responses given to the questionnaires administered on a daily basis and oversaw data entry to ensure validity of collected data.
2. Each Interviewer administering a Questionnaire during an interview session had a copy of the study definitions of terminologies to ensure uniform interpretation of terms.
3. Random selection of clusters and schools and systematic selection of students to minimize variability.
4. The researcher was not involved in the recruitment of subjects.
5. Research assistants were educated on research and utilization of research tools.

Ethical considerations

1. Permission was sought from the Kenyatta Hospital Ethics Research Committee to collect and analyze data collected in the study as part of the Thesis Dissertation. Copies of this Protocol, the Informed Consent Form as well as any Subsequent Modifications to either document was presented to the above named committee for written approval prior to commencing the study.
2. Any Modifications to the Study Protocol that affected the student's volition to take part in the study, the intent of the study or student's safety was to be submitted to the KHERSC for written approval prior to incorporation of these changes in the study procedure.
3. Written permission was sought from the national commission for science technology and innovation and county director of education. Verbal permission was sought from the school principles or where not applicable their deputies as well as the parents of the participants. Students were informed that participation is voluntary and that there is no financial reward for participating, neither is there negative implication for opting out. Those willing to participate signed an assent form.
4. No experimental investigations or products were employed in this study.
5. Strict Confidentiality was observed throughout the entire study period, held in trust by participating investigators and the research staff. The Study Participants were given study identification numbers and no personal identification data was recorded. No Information

concerning the individual study findings will be released to any unauthorized third party without prior written approval of the study institution or the Ethics Research Committee.

6. The Overall Study Findings will be availed to the county education office as well as ministry of education and school health department in the hope that it will help in instituting measures to minimize bullying. The study findings will also be presented to the University of Nairobi (UON) Department of Pediatrics and Child Health Academic Staff and Students in fulfillment of the requirements of the M.Med Program.

Appendices

Timeframe

The following is the time-frame of the study process:

Number	Activity	Estimated Time
1	Proposal Development and Presentation	November 2014
2	Submission of proposal for ethical approval	May 2015
3	Data Collection	February 2016
4	Data Analysis	February 2016
5	Thesis writing	March 2016
6	Thesis submission	April 2016

Study budget

Category	Remarks	Units	Unit Cost (KShs)	Total (KShs)
Proposal Development	Printing drafts	6750 pages	3	20,250
	Proposal Copies	10 copies	500	5,000
Data Collection	Stationery Packs (Pens, Paper and Study Definitions)	10	100	1000
	Training research assistants	1 day	3000	3,000
	Research assistants (8)	2 weeks	500 X 8	48,000
Data Analysis	Statistician	1		20,000
Thesis Write Up	Computer Services			5,000
	Printing drafts	1000 pages	5	5,000
	Printing Thesis	10 copies	500	5,000
Contingency funds				25,000
Total				137,250

Modified Olweus bullying questionnaire

Name of school

Class/form

Age

1. How do you like school?
 - a) I dislike school very much
 - b) I dislike school
 - c) I neither like nor dislike school
 - d) I like school
 - e) I like school very much
2. Are you a boy or a girl?
 - a) Boy
 - b) Girl
3. How many good friends do you have in your class (es)?
 - a) None
 - b) I have 1 good friend in my class(es)
 - c) I have 2 or 3 good friends in my class (es)
 - d) I have 4 or 5 good friends in my class (es)
 - e) I have 6 or more good friends in my class (es)
4. How often have you been bullied at school in the last one year?
 - a) I have not been bullied at school in the last one year.
 - b) It has only happened once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times in a week

5. Which term in form 1 did the bullying start?
- a) Beginning of first term.
 - b) In the middle of first term.
 - c) Beginning of second term.
 - d) Mid second term.
 - e) Beginning of third term
6. I was called mean names, was made fun of or teased in a hurtful way.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.
7. Other students left me out of things on purpose or excluded me from their group of friends or completely ignored me.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.
8. I was hit, kicked, slapped, shoved around, pushed or locked indoors.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.

9. Other students told lies or spread false rumors about me and tried to make others dislike me.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.
10. I had money or other things taken from me or damaged.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.
11. I was threatened or forced to do things I did not want to do.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.
12. I was bullied with mean names about my race or colour.
- a) It has not happened to me in the last one year.
 - b) Only once or twice.
 - c) 2 or 3 times a month.
 - d) About once a week.
 - e) Several times a week.

13. I was bullied with mean names, comments or gestures with sexual meaning.

- a) It has not happened to me in the last one year.
- b) Only once or twice.
- c) 2 or 3 times a month.
- d) About once a week.
- e) Several times a week.

13. I) I was bullied with mean or hurtful messages, calls or pictures or in other ways on my cell phone or over the internet (computer). Please remember that it is not bullying when done in a playful and friendly way)

- a) It has not happened to me in the last one year.
- b) Only once or twice.
- c) 2 or 3 times a month.
- d) About once a week.
- e) Several times a week.

13.II) If you were bullied on the cell phone or over the internet, how was it done?

- a) Only over the internet.
- b) Only on the cell phone.
- c) In both ways.

14. In which class (es) is the students who bully you?

- a) I have not been bullied at school in the last one year.
- b) In my class.
- c) In a different class but same level (year).
- d) In a higher level/year.
- e) In a lower level/year.
- f) In both higher and lower level/year.

15. Have you been bullied by boys or girls?

- a) I have not been bullied at school in the last one year.
- b) Mainly by 1 girl.
- c) By several girls.
- d) Mainly by 1 boy.
- e) By several boys.
- f) By both boys and girls.

16. By how many students have you usually been bullied?

- a) I have not been bullied at school in the last one year.
- b) Mainly by 1 student.
- c) By a group of 2 -3 students.
- d) By a group of 4 – 9 students.
- e) By a group of 10 or more students.
- f) By several groups of students.

17. How long did the bullying last?

- a) I was bullied only in first term.
- b) I was bullied only in second term.
- c) I was bullied only in third term.
- d) I was bullied in first term and second term.
- e) I was bullied in second term and third term.
- f) I was bullied in first term, second term and third term.

18. Where have you been bullied?

- a) I have not been bullied at school in the last one year.
- b) I have been bullied in one or more of the following places in the last one year.
 - i) On the playground /during recess or break time.
 - ii) In the corridors.

- iii) In the class (when the teacher was in the room).
 - iv) In the class (when the teacher was not in the room).
 - v) In the lunch room.
 - vi) In the bathroom.
 - vii) In gym class or gym locker room.
 - viii) On the way to and from school.
 - ix) At the school bus stop.
 - x) On the school bus.
 - xi) Somewhere else at school.
19. Have you told anyone that you have been bullied in the last one year?
- a) I have not been bullied at school in the last one year.
 - b) I have been bullied but I have not told anyone.
 - c) I have been bullied and I have told somebody about it.

If you have told someone, who did you tell?

- i) Your class teacher.
- ii) Another adult at school
- iii) Your parents/guardians.
- iv) Your brothers/sisters.
- v) Your friends.
- vi) Somebody else

20. How often does a teacher or other adults try to make a stop to it when a student is being bullied at school?
- a) Almost never.
 - b) Once in a while.
 - c) Sometimes.

- d) Often.
 - e) Almost always.
21. How often do other students try to make a stop to it when a student is being bullied?
- a) Almost never.
 - b) Once in a while.
 - c) Sometimes.
 - d) Often.
 - e) Almost always.
22. Has any adult at home contacted your school to try to stop you being bullied in the last one year?
- a) I have not been bullied at school in the last one year.
 - b) No they have not contacted the school.
 - c) Yes they have contacted the school once.
 - d) Yes they have contacted the school several times.
23. When you see a student your age at school being bullied what do you feel or think?
- a) That is probably what he /she deserves.
 - b) I do not feel much.
 - c) I feel a bit sorry for him/her.
 - d) I feel a bit sorry for him/her and want to help him/her.
24. How often have you taken part in bullying other student (s) at school in the last one one year?
- a) I have not bullied other students at school in the last one one year.
 - b) It has only happened once or twice.
 - c) Two or three times a month.
 - d) About once a week.
 - e) Several times a week.

25. I called another student(s) mean names and made fun of or teased him/her in a hurtful way.

- a) It has not happened in the last one year.
- b) It has only happened once or twice.
- c) 2 or 3 times a month.
- d) About once a week.
- e) Several times a week.

26. I left other student(s) out of things on purpose or excluded them from my group of friends or completely ignored them.

- a) It has not happened to in the last one one year.
- b) Only once or twice.
- c) 2 or 3 times a month.
- d) About once a week.
- e) Several times a week.

27. I hit, kicked, slapped, shoved around, pushed or locked them indoors.

- a) It has not happened in the last one year.
- b) Only once or twice.
- c) 2 or 3 times a month.
- d) About once a week.
- e) Several times a week.

28. I told lies or spread false rumors about other students and tried to make others dislike him/her.

- a) It has not happened in the last one one year.
- b) Only once or twice.
- c) 2 or 3 times a month.
- d) About once a week.

- e) Several times a week.
29. I took money or other things from other student(s) or damaged them.
- a. It has not happened in the last one year.
 - b. Only once or twice.
 - c. 2 or 3 times a month.
 - d. About once a week.
 - e. Several times a week.
30. I threatened or forced other student(s) to do things they did not want to do.
- a. It has not happened in the last one year.
 - b. Only once or twice.
 - c. 2 or 3 times a month.
 - d. About once a week.
 - e. Several times a week.
31. I bullied other student(s) with mean names about their race or colour.
- a. It has not happened in the last one year.
 - b. Only once or twice.
 - c. 2 or 3 times a month.
 - d. About once a week.
 - e. Several times a week.
32. I bullied other student(s) with mean names, comments or gestures with sexual meaning.
- a. It has not happened in the last one year.
 - b. Only once or twice.
 - c. 2 or 3 times a month.
 - d. About once a week.
 - e. Several times a week.

33. I) I bullied other student(s) with mean or hurtful messages, calls or pictures or in other ways on my cell phone or over the internet (computer). Please remember that it is not bullying when done in a playful and friendly way)

- f) It has not happened in the last one year.
- g) Only once or twice.
- h) 2 or 3 times a month.
- i) About once a week.
- j) Several times a week.

34.II) If you bullied on the cell phone or over the internet, how was it done?

- a) Only over the internet.
- b) Only on the cell phone.
- c) In both ways.

34. Has your class teacher or any other teacher talked to you about your bullying another student at school in the last one year?

- a) I have not bullied other student(s) at school in the last one year.
- b) No they have not talked to me about it.
- c) Yes they have talked to me about it once.
- d) Yes they have talked to me about it several times.

35. Has any adult at home talked to you about your bullying another student at school in the last one year?

- a) I have not bullied other student(s) at school in the last one year.
- b) No they have not talked to me about it.
- c) Yes they have talked to me about it once.
- d) Yes they have talked to me about it several times

36. Do you think you could join in bullying a student whom you do not like?

- a) Yes.
- b) Yes, may be.

c) I do not know.

d) No I do not think so.

e) No.

f) Definitely no.

37. How do you usually react if you see or learn that a student your age is being bullied by another student(s)?

a) I have never noticed that student(s) my age have been bullied.

b) I take part in the bullying.

c) I do not do anything but I think bullying is ok.

d) I just watch what is going on.

e) I do not do anything but I think I ought to help the bullied student.

f) I try to help the bullied student in one way or another.

38. How often are you afraid of being bullied by other students at your school?

a) Never.

b) Seldom.

c) Sometimes.

d) Fairly often.

e) Often.

f) Very often.

39. Overall how much do you think your class teacher has done to cut down on bullying in your class room in the last one year?

a) Little or nothing.

b) Fairly little.

c) Somewhat.

d) A good deal.

e) Much.

(the question below is optional, you do not have to answer if you do not want to)

40. How do you describe yourself?
- a) Black
 - b) Arab
 - c) Indian
 - d) white

Mental health questionnaire

NO.

Over the last 6 months, how often have you been bothered by the following problems?

Not at all **(0)**. Several months **(1)**. Over half of the time **(2)**. Nearly every day **(3)**

NO.		0	1	2	3
1	Feeling nervous, anxious, or on edge?				
2	Not being able to stop or control worrying?				
3	Worrying too much about different things?				
4	Trouble relaxing?				
5	Being so restless that it's hard to sit still?				
6	Becoming easily annoyed or irritable?				
7	Feeling afraid as if something awful might happen?				
8	Feeling down, depressed, irritable, or hopeless?				
9	Little interest or pleasure in doing things?				
10	Trouble falling asleep, staying asleep, or sleeping too much?				
11	Poor appetite, weight loss, or overeating?				
12	Feeling tired, or having little energy?				
13	Feeling bad about yourself - or feeling that you are a failure, or that you have let yourself or your family down?				
14	Trouble concentrating on things like school work, reading, or watching TV?				
15	Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you were				

	moving around a lot more than usual?				
16	Thoughts that you would be better off dead, or of hurting yourself in some way?				

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all _____

Somewhat difficult _____

Very difficult _____

Extremely difficult _____

Socio economic assessment tool

1. Whom do you live with?
 - a) Parents
 - b) Relative
 - c) Non related guardian
2. What kind of a house do you live in?
 - a) Permanent house
 - b) Semi-permanent house
 - c) Temporary mud house
3. Are you parents living together?
 - a) Yes
 - b) No but are still married
 - c) No because they are divorced
 - d) No because one or both passed on
4. What is the average monthly income of your guardians?
 - a) 0-10000 ksh
 - b) 10001 to 30000 ksh
 - c) 30001 to 50000 ksh
 - d) 50001 to 70000 ksh
 - e) 70001 to 100000 ksh
 - f) More than 100000 ksh
5. How many siblings do you have?

6. How many of the siblings go to school?

7. What is the source of cooking at home?
 - a) Firewood
 - b) Charcoal
 - c) Gas
 - d) electricity
8. What is the source of lighting at home?
 - a) Kerosene
 - b) Candle
 - c) Solar
 - d) electricity

School performance questionnaire

What did you score in the following in the last 1 year?

subject	1 st term	2 nd term	3 rd term	Average score
English				
Kiswahili				
Mathematics				
Chemistry				
Biology				
Physics				
Geography				
History and government				
Religious education				
Physical education				
Others,				
Total score				

Students assent form

ASSENT FORM

RELATIONSHIP BETWEEN BULLYING AND SCHOOL PERFORMANCE STUDENT ASSENT FORM:

Date:

Study Title: Association between school bullying, mental health and school performance

**Investigator: Dr. Rashid Musa (MB ChB)
Paediatric Resident, University of Nairobi
Tel Number:- 0717- 248228**

Supervisors:

Prof Francis .E. Onyango: M.B.Ch.B, M.Med. (Paed), M.P.H., FCP, F. ClinEpid, CTM, CLM.

Senior Lecturer, department of Paediatrics and Child Health, University of Nairobi

Dr. Daniel Njai (MB Ch B, M.Med. (paed.)

Senior Lecturer, department of Paediatrics and Child Health, University of Nairobi

Dr Josephine Omondi (MB Ch B, M.Med, psychiatry.)

Lecturer, Psychiatry. Department of Psychiatry, Kenyatta National Hospital.

Investigator's Statement:

We are requesting you to kindly participate this research study. The purpose of this assent form is to provide you with the information you will need to help you decide whether to participate in the study. Please read this consent information carefully and ask any questions or seek clarification on any matter concerning the study with which you are uncertain.

Introduction:

Bullying refers to repeated oppression, either physical or psychological, of a less powerful person by a more powerful person or group, the essential ingredient being an imbalance of power which makes possible the ill treatment of a victim. There is a high prevalence of bullying in

Kenyan schools. This study seeks to establish whether bullying leads to mental health problems and or poor school performance.

Benefits:

The results of the study will be shared with the policy makers in the education and health sectors who are expected to institute measures to minimize bullying and come up with ways to help the bullied students overcome the psychological problems associated with bullying. This will help improve school performance and mental health of students.

Risks:

There will be no risks to the students during the study. There will be no invasive procedures carried out in the study that may harm you're the students.

Refusal to participate will in no way jeopardize the education of the students.

Voluntariness:

The study will be fully voluntary. There will be no financial rewards to the students for participating in the study. One is free to participate or withdraw from the study at any point. Refusal to participate will not compromise the students education in any way.

Confidentiality:

The information obtained about the student and their family will be kept in strict confidence. No specific information regarding the student or their family will be released to any person without their or their parents written permission. We will, however, discuss general overall findings regarding all students assessed but nothing specific will be discussed regarding the students. We will also, not reveal the identity of the student in these discussions.

Problems or Questions:

If you ever have any questions about the study or about the use of the results you can contact the principal investigator, **Dr Rashid Musa** by calling **0717-248228**.

If you have any questions on your rights as a research participant you can contact the **Kenyatta National Hospital Ethics and Research Committee (KNH- ESRC)** by calling **2726300 Ext. 44355**.

Assent Form: Participant's Statement:

I _____ having received adequate information regarding the study research, risks, benefits hereby **AGREE / DISAGREE** (Cross out as appropriate) to participate in the study. I understand that our participation is fully voluntary and that I am free to withdraw at any time. I have been given adequate opportunity to ask questions and seek clarification on the study and these have been addressed satisfactorily.

Students Signature: _____ Date _____

I _____ declare that I have adequately explained to the above participant, the study procedure, risks, benefits and given him/her time to ask questions and seek clarification regarding the study. I have answered all the questions raised to the best of my ability.

Interviewers Signature _____ Date _____

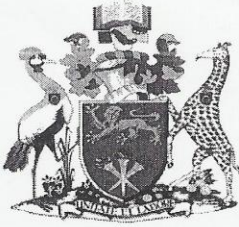
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21st January 2016

Dr. Rashid Issa Musa
Reg. No.H58/69019/13
Dept.of Paediatrics & Child Health
School of Medicine
College of Health Sciences
University of Nairobi

Dear Dr. Musa,

Revised research proposal: Association between bullying mental health and school performance in Form one Pupils in secondary schools in Kisumu (P363/05/2015)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and **approved** your above proposal. The approval periods are 21st January 2016 –20th January 2017.

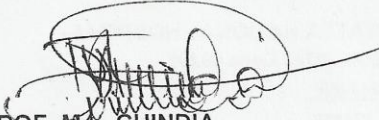
This approval is subject to compliance with the following requirements:

- a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
- c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- f) Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- g) Submission of an *executive summary* report within 90 days upon completion of the study.
This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Protect to discover

Yours sincerely,



PROF. M.L. CHINDIA
SECRETARY, KNH-UoN ERC

- c.c. The Principal, College of Health Sciences, UoN
 The Deputy Director, CS, KNH
 The Chair, KNH-UoN ERC
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