

Prevalence of Conduct Disorder among Adolescents in Secondary Schools: A Case of Kamukunji and Olympic Mixed Sub-County Secondary Schools in Nairobi County, Kenya

Monica Gitonga, PhD., Kenya Methodist University; Susan Muriungi, PhD., and Kennedy Ongaro, PhD., Daystar University; M. Omondi, PhD., Mount Kenya University

Abstract

Conduct disorder (CD) is a behavioral emotional mental disorder associated with a host of negative and social outcomes among adolescents. The purpose of this study was to determine the prevalence of CD and establish the relationship between CD and socio-demographic characteristics of the respondents. The study adopted a cross-sectional study design. Cluster and purposive sampling techniques were used to select 611 participants out of the 840 study population in the two sites. Data was collected by administering a socio-demographic questionnaire (SDQ) and a standardized conduct disorder scale (CDS). Measures of central tendencies, bivariate and multivariate analysis were computed using SPSS version 21. The key findings of the study were that overall CD prevalence was 31.4%, with males having a higher prevalence than females $p=0.009$, CD increased with respondents' age ($p=0.008$), religion significantly impacted on CD prevalence either as a precipitating or as a protective factor ($p=0.041$). CD being a behavioral emotional disorder and the prevalence being this significantly high call for appropriate psychological interventions. Based on the findings, the study recommends capacity building of principals and teachers so as to be able to identify CD tendencies among students. Further, the study suggests effective treatment for CD in order to help curb the emergence of CD among the students while reducing the burden of disease on parents of affected adolescents, the school and the community.

Key words: Conduct disorder, prevalence, socio-demographic characteristics, conduct disorder scale.

Introduction

Conduct disorder (CD) is an externalizing mental disorder which occurs in children and adolescents aged 6-19 years (Bartol & Bartol, 1989). According to the American Psychological Association (APA, 2013), the disorder presents through behaviors such as aggression towards people or animals, destruction of property, deceitfulness or theft and serious violation of rules. Adolescents with CD lack empathy for others and show little remorse, guilt, or understanding of the damage and pain they inflict on people by their behavior (Kim-Cohen, 2003; Pruitt, 1999).

CD is associated with negative health outcomes including substance addiction, high risk sexual behaviors that expose the adolescents to sexually transmitted infections, unwanted pregnancies, crimes, academic failure and traumatic incidences including deaths (Shamsie, 2001). A study by Woodward et al. (2000) found 10% of the girls who had high CD at age eight had a pregnancy rate 5.3 times higher at age 18 than those who had mild or no CD. Untreated CD can, in fact, progress to antisocial personality disorder and learning deficits. A

study by Myers (1998) found that 61% of the study participants who had met the criteria for CD progressed to have antisocial personality disorder at a four-year interval. According to Loeber et al., (1993b), 40% of children and adolescents with CD eventually developed antisocial personality disorder. Kim-Cohen et al (2003) found that among all adult disorders, 25%-60% of the cases had a history of CD. Agulamu (2012) revealed that 60% of adults arrested in Nigeria for violent crimes had a background of CD while in secondary school.

Globally, CD has been found to increase significantly during the adolescent stage (Dryfoos, 1990). A study by Simons-Morton et al. (2001) in the USA, found that by grade 8, 31.5% of adolescents were using alcohol and 26.2% were smoking cigarettes, 44.2% had been in a physical fight within a year while truancy, bullying, theft and vandalism were common. In India, a study by Sarkhel, Sinha, Arora, and Desarkar (2006) noted that an increase in prevalence occurred among both males and females in all socio-economic groups at the rate of 4.58% for boys and 4.50% for girls. The Office of National Statistics in the UK (2004), gave the prevalence of CD as 3.9% for girls, 7.5% for boys and 5.8% all combined (Green, McGinnity, Meltzer, Ford, & Goodman, 2004). Similarly, Scott (2007) has put the prevalence of CD among adolescents at 5% worldwide.

Several other studies seemed to indicate that CD prevalence had associations with demographic characteristics at varying degrees. For example, CD was found to be higher and more common in boys than in girls. Russo and Beidei (1994), Gidden (2004), and Agnew (2005) asserted that the prevalence of CD was estimated at 2% for girls and 9% for boys. The APA (1994) reported that CD is more common in boys at 6%-16% compared to girls at 2%-9%. All this means that CD is likely to occur 3 or 4 times more among boys than girls. The increase of CD with age was also evidenced in a study by Loeber et al. (1993) which indicated that the onset of CD tended to begin in late childhood and early adolescence, with higher prevalence being observed in late adolescence.

With regard to socio-economic status (SES), Aneshensel and Sucoff (1996) argued that parental SES influenced adolescents' exposure to resource availability or unavailability and stresses which in turn affected their mental health, leading to depression, anxiety and CD. They further noted that adolescents in low SES neighborhoods were presented with greater hazards such as crime, violence, drug and substance abuse than those in high SES neighborhoods. Religion, on the other hand, seemed to impact the prevalence of CD as a protective or as a precipitating factor. In fact, religious service attendance was found to have a positive correlation to health and mental health outcomes (Levin & Taylor, 1998), a finding which appeared to contrast with that of Muriungi (2011) that Protestants and Catholics were lenient about religious service attendance which might have led their adherents to develop mental problems.

In Africa, the available literature indicates high levels of CD among adolescent students in high schools. Nicholi (1999; as cited in Humaida, 2012) in his study in Khartoum-Sudan noted that 10%-15 % of children/adolescents referred to psychiatric clinics were diagnosed with CD. Another study by Briggs and Alikor (2013) found a prevalence rate of 15.8% among students in urban schools in Nigeria. In South Africa, a study on the prevalence of mental disorders among adolescents and adults by Kleintjes, Flisher, Fick, Railoun, Lund,

Molteno, Robertson (2009), revealed that out of all the mental disorders observed, CD had 4% prevalence.

The current study found no literature that showed the prevalence of CD. However, There is evidence to suggest that in Kenya, some of the disruptive behaviors indicative of CD increased among secondary school students in the last decade (Nyakundi, 2014). Many incidences have been observed and reported in the local dailies in Kenya, such as the St. Kizito incident in which female students were raped by male students and 19 girls died (Simatwa, 2007), Hawinga School girls gang-raped in 1993 (Oriang, 2001) and Bombolulu High School fire tragedy in 1998 that claimed 25 lives (Ndetei et al., 2004). Four school prefects in Nyeri High School burnt to death by fellow students (Mwaniki, 1999), Kyanguli High School fire of 2001 in which 67 students died (Odalo, 2001), and an student at Upper Hill School burnt to death in 2008 (Ombati, 2008). Reported also abound of numerous school strikes, poor academic performance and misconduct that were not only violent and destructive but also seemed to be premeditated, planned, resulting in great harm to human life.

The studies, observations and reports indicate that CD is a problem among secondary school students. This study aimed to determine the prevalence of CD and analyze its relationship with socio-demographic characteristics among adolescent secondary school students.

Methodology

The study was a descriptive cross-sectional study conducted in Nairobi County, Kenya in sub-county secondary schools. Nairobi County was purposively selected for the study because it has the highest number of secondary schools at 211 and among them were 28 sub-county secondary schools. It is highly cosmopolitan and therefore a good representation of the different ethnic groups. The sub-county secondary schools from Nairobi County were further selected for the study because they were more in number (28) and had a higher estimated population of 8,400 students when compared to other types of schools.

Kamukunji and Olympic mixed sub-county secondary schools were selected through stratified randomization method. Kamukunji school had four classes (form one to form four), with a total population of approximately 450 students of which 300 were in forms one, two and three (P. K. Gakungu, personal communication, July 1, 2015). Olympia school had four classes (form one to form four), with a total student population of 670 out of which 540 were in forms one, two and three (B.K. Mbugua, personal communication, July 7, 2015). The form four students from both schools were excluded from the study because they were busy preparing for their national end of year Kenya Certificate of Secondary Education Examinations.

A multistage sampling technique was used. The first stage purposively sampled sub-county schools as well as the target population comprising forms one, two and three students. The second stage employed stratified random sampling which sampled Kamukunji and Olympic mixed sub-county secondary schools as the study sites. The sample size selected from each school was calculated on the basis of the prevalence of CD among the students

regionally. The study used 16% proportion of CD among adolescents' in secondary schools. The sample size therefore was determined through a calculation using the Charan and Biswas (2013) formula. The formula was chosen because it is the one mainly used to calculate sample size for different study designs in medical/clinical research. The formula gave the minimum sample size as 574 respondents. The study however, recruited 611 respondents for the study. The research instruments consisted of a self-administered questionnaire comprising;

a) A researcher-developed socio-demographic questionnaire (SDQ) which sought to collect information related to the respondents' gender, age, level of education, place of residence, religion, parents/guardians marital status, occupation and other socio-economic characteristics.

b) A standardized conduct disorder scale (CDS) which has 40 items and with four subscales that represent core symptom clusters necessary for the diagnosis of CD. The scale has good psychometric properties with reliability coefficient of: aggressive conduct, 0.94, hostility, 0.91, deceitfulness and theft, 0.79, and rule violations, 0.74. The overall reliability coefficient for the whole scale is 0.96 (Gillian, 2002). The cut-off scores for the different levels of CD, according to Gillian, are shown in Table 1:

Table 1: Conduct Disorder Scale Scores

| CD Quotient: | Degree of Severity | Probability of CD |
|--------------|--------------------|-------------------|
| ≥100 | Severe | Highly probable |
| 85 – 99 | Moderate | Probable |
| 70 – 84 | Mild | Likely |
| ≤69 | Not applicable | Unlikely |

Data collected was double entered by two separate groups of data entry clerks, cleaned and analyzed using SPSS version 21 with descriptive and inferential statistics generated and presented in form of figures and tables.

Results

Out of the 611 forms one, two and three respondents sampled from the two schools. One hundred and ninety-nine (199) respondents were from Kamukunji out of whom 69 met the criteria for CD. Olympic contributed 412 respondents with 123 meeting criteria for CD. Of the 611 respondents, 293 were males (48%) while 318 were females (52%). The mean age for the males was 16.64 years while it was 15.96 years for females. The majority of the respondents were Protestants at 218(36%), while “others religions” were 152(25%), Catholics were 147(24%) and Muslims were 95(16%).

The data on socio-demographic characteristics of the respondents from the two schools showed that the two sites were comparable with no significant statistical difference with respect to the key characteristics, namely religion, sex, education and wealth index.

Table 2 shows the overall CD prevalence, the prevalence for each study site and a summary of the CD prevalence based on the socio-demographic characteristics of the respondents. The overall prevalence of CD for both groups was 31.4% (95% CI, 27.72% -35.08%), while. The prevalence of CD at the two sites was comparable at $p=0.229$.

As Table 2 indicates, male respondents had a higher prevalence of CD at 36.5% (95% CI: 30.99% - 42.01%) while the female had 26.7% (95% CI: 21.84%-31.56%), both of which were statistically significant ($p=0.009$). The mild severity of CD had the highest prevalence of 17.8% (95% CI: 14.77% - 20.83%), followed by moderate severity at 8.7% (95% CL: 6.47%-10.93%) while severe degree of CD was the least prevalent at 4.9% (95% CI: 3.19%-6.61%). These results were statistically significant ($p<0.001$).

The CD prevalence based on age increased as the respondents grew older, but there was a dip at age 16. At ages 17 and 18 the CD prevalence was 38.6% (95% CI: 31.01%-46.19%) and 45.5% (95% CI: 33.49%-57.52%) respectively, compared to 27.2% (95% CI: 20.7%-33.7%) at 16 years and 30.4% (95% CI: 22.64%-38.16%) at 15 years. This was statistically significant at $p=0.008$. Those respondents who professed the Catholic faith had a higher CD prevalence of 36.7% (95% CI: 29.91%-44.4%), followed by Protestants at 34.9% (95% CI: 28.57%-41.23%) and Muslims at 28% (95% CI: 19.33%-37.4%). Respondents under "Other" religions had the least CD prevalence at 23.2% (95% CI: 16.47%-29.93%), which was statistically significant $p=0.041$.

The severity of CD showed that the majority of the respondents came under mild degree of severity (17.8% (95% CI, 14.77%-20.83%)), followed by moderate degree (8.7% (95% CI, 6.47%-10.93%)) and severe degree at 4.9% 95% CI, 3.19%-6.61%). These were statistically significant ($p<0.001$).

Table 2: Prevalence of CD according to Socio-Demographic Characteristics among the Respondents

| Diagnosis | Prevalence (n, %) | 95% CI | p- value |
|------------------|-------------------|---------------|----------|
| Conduct Disorder | 192/611 (31.4%) | 27.72%-35.08% | |
| School | | | |
| Kamukunji | 69/199 (34.7%) | 28.09%-41.31% | 0.229 |
| Olympic | 123/412 (29.9%) | 25.48%-34.32% | |
| Severity | | | |
| Mild | 109//611 (17.8%) | 14.77%-20.83% | 0.001 |
| Moderate | 53/611 (8.7%) | 6.47%-10.93% | |
| Severe | 30/611 (4.9%) | 3.19%-6.61% | |

| Sex | | | |
|-------------------------------|-----------------|-----------------|-------|
| Male | 107/293 (36.5%) | 30.99%-42.01% | 0.009 |
| Female | 85/318 (26.7%) | 21.84%-31.56% | |
| Age | | | |
| 13 & 14 | 5/40 (12.5%) | 2.25% - 22.75% | |
| 15 | 41/135 (30.4%) | 22.64%-38.16% | 0.008 |
| 16 | 49/180 (27.2%) | 20.7% - 33.7% | |
| 17 | 61/158 (38.6%) | 31.01% 46.19% | |
| 18 | 30/66 (45.5%) | 33.49% 57.51% | |
| 19 | 5/26 (19.2%) | 4.06% - 34.34% | |
| 20 | 0/3 (0.0%) | n/a | |
| 21 | 1/ 2 (50.0%) | n/a | |
| Religion | | | |
| Islam | 27/95 (28.4%) | 19.33%-37.47% | |
| Protestants | 76/218 (34.9%) | 28.57% -41.23% | |
| Catholic | 54/147(36.7%) | 28.91% - 44.49% | 0.041 |
| Others | 35/151 (23.2%) | 16.47%-29.93% | |
| Wealth Index | | | |
| Lowest | 35/122 (28.7%) | 20.67%-36.73% | |
| Second | 44/122 (36.1%) | 27.58%-44.62% | 0.365 |
| Middle | 37/122 (30.3%) | 22.15%-38.45% | |
| Fourth | 32/122 (26.2%) | 18.40%-34.00% | |
| Highest | 44/123 (35.8%) | 27.33%-44.27% | |
| Level of Academic Performance | | | |
| Satisfactory | 20/62 (32.3%) | 20.66%-43.94% | |
| Unsatisfactory | 172/549 (31.3%) | 27.42%-35.18% | 0.022 |

Table 3 highlights the bivariate analysis showing the statistical association and the strength of association between the different socio-demographic characteristics and the presence or absence of CD. The characteristics were gender, religion, age, sex, parental/guardian marital status and education level. CD was more prevalent among male respondents (36.5%) as opposed to female respondents (26.7%) and this was statistically significant $p=0.009$. With regard to religion, Catholic respondents tended to have a high prevalence of CD (36.7%), followed by Protestants (34.9%), then Muslims (28.4%), and “others” at (23.2%). These differences were statistically significant ($p=0.041$). The age of the respondents was noted to be statistically significant $p=0.008$ with the highest prevalence observed in the 17 and 18-year-old group and lowest in the 13 and 14-year-old respondents. The rest of the socio-demographic characteristics, namely parents/guardians’ marital status and their education levels were found not to be statistically significant.

Table 3: Bivariate Analysis of Socio-Demographic Characteristics Between Respondents with and without Conduct Disorder

| | No Conduct Disorders | Conduct Disorders | χ^2 statistics | p-value |
|------------------------------------|----------------------|-------------------|---------------------|---------|
| Name of School | | | | |
| Kamukunji | 130/199(65.3%) | 69/199 (34.7%) | | |
| Olympic | 289/412 (70.1%) | 123/412(29.9%) | 1.446 | 0.229 |
| Sex | | | | |
| Male | 186/293 (63.5%) | 107/293(36.5%) | | |
| Female | 233/318 (73.3%) | 85/318 (26.7%) | 6.781 | 0.009 |
| Age | | | | |
| 13&14 | 53/40 (87.5%) | 5/40 (12.5%) | | |
| 15 | 94/135 (69.6%) | 41/135 (30.4%) | | |
| 16 | 131/180 (72.8%) | 49/180 (27.2%) | 11.945 | 0.008 |
| 17 | 97/158 (61.4%) | 61/158 (38.6%) | | |
| Religion | | | | |
| Protestants | 142/218 (65.1%) | 76/218 (34.9%) | | |
| Islam | 68/95 (71.6%) | 27/95 (28.4%) | | |
| Catholics | 93/147 (63.3%) | 54/147 (36.7%) | 8.281 | 0.041 |
| Others | 116/151 (76.8%) | 35/151 (23.2%) | | |
| Marital status | | | | |
| Married | 278/407 (68.3%) | 129/407 31.7%) | | |
| Single | 21/33 (63.6%) | 12/33 (36.4%) | | |
| Divorced/Separated | 61/91 (67.0%) | 30/91 (33.0%) | 1.482 | 0.686 |
| Widowed/Widower | 59/80 (73.8%) | 21/80 (26.2%) | | |
| Father's Level of Education | | | | |

| | | | | |
|--------------------------------------|-----------------|----------------|-------|-------|
| No Schooling | 12/16 (75%) | 4/16 (25%) | | |
| Primary School | 50/79 (63.3%) | 29/79 (36.7%) | | |
| Secondary School | 152/223 (68.2%) | 71/223 (31.8%) | 2.062 | 0.560 |
| Tertiary School | 117/186 (62.9%) | 69/186 (37.1%) | | |
| Mother's Level of Education | | | | |
| No Schooling | 13/22 (59.1%) | 9/22 (40.9%) | | |
| Primary School | 89/127 (70.1%) | 38/127 (29.9%) | | |
| Secondary School | 164/251 (65.3%) | 87/251 (34.7%) | 1.511 | 0.680 |
| Tertiary School | 97/149 (65.1%) | 52/149 (34.9%) | | |
| Guardian's Level of Education | | | | |
| No Schooling | 6/7 (85.7%) | 1/7 (14.3%) | | |
| Primary School | 8/10 (80.0%) | 2/10 (20.0%) | | |
| Secondary School | 26/33 (78.8%) | 7/33 (21.2%) | 0.272 | 0.978 |
| Tertiary School | 41/53 (77.4%) | 12/53 (22.6%) | | |

Discussion

The sample had more female respondents than male respondents which could be attributed to the fact that in recent times, there has been a concerted effort to empower the girl child. Higher enrollments and retention in schools is one result of the effort (NORRAG, 2016). A study by Odhiambo, Simatwa, and Yalo (2013) showed that in 2006 transition rate from primary schools to secondary schools went up from 56.2%.(2005) to 63.2% for girls while that of boys went down from 58.3% (2005) to 56.6%. Concerning the age of the respondents, the mean age for males was 16.64 years while that of females was 15.96. The age bracket for the respondents was 13-18 years with a mean age of 16.

The social-economic status of the parents for both groups was comparable at (95% CI, 20.67%-44.27% $p=0.365$). The over-representation of the Protestant religion at 218 followed by the Catholic religion at 147 is a reflection of the national trend. An International Religious Freedom Report (2006) indicated a population of 47.4% Protestants, 23.3% Catholics, 17.5% Muslims and 11.8% "other" religions. Furthermore, a Kenya Religions Statistics (2006) reported Protestant to be 45%, Roman Catholic to be 33%, indigenous beliefs at 10%, Muslims at 10% and others to be 2%. Both reports seemed to confirm the findings of the current study.

The overall CD prevalence was 31.4 % (95% CI: 27.72% -3 5.08%), close to sevenfold higher than the global prevalence of 5% (Scott, 2007) and twofold higher than the regional prevalence at 15%-16% (Briggs & Alikor, 2013). They also noted that the prevalence estimates reported in various studies vary widely, ranging from 0.9%- 16%. Furthermore, according to Boyle et al., (1996); Loeber (1990) and Burke et al., (2000), several prior prevalence studies based their estimates on DSM-III and DSM-III-R criteria. They argued that any minor changes in the diagnostic criteria of CD results in major differences in prevalence. The global and regional CD prevalence estimates are therefore, unlikely to accurately represent the CD prevalence based on DSM-V which the current study was based on.

According to Loeber et al. (1993b) the global prevalence studies available seemed to represent children and early adolescent population yet CD tends to peak in late adolescence. The majority of the respondents in the current study were late adolescents, which might explain the high CD prevalence. The regional studies, on the other hand, were carried out among secondary schools in capital cities (Khartoum and Lagos) and not in informal settlements where crime rate and other anti-social behaviors are rampant and are a factor for adolescents developing CD (Briggs-Frank et al., 2013). The study further found that CD prevalence was higher in male respondents at (36.5%; 95% CI: 30.99%-42.01%) compared to female respondents at (26.7%; 95% CI: 21.84%-31.56%), and was statistically significant $p=0.009$.

Several other studies indicated similar results, suggesting that CD is higher and more likely to occur among boys than among girls. For instance, the prevalence of CD was estimated at 2% for girls and 9% for boys (Agnew, 2005; Giddens, 2004; Russo & Beidei, 1994). In another study by Maughan et al. (2004), CD was found to be significantly more common in boys than girls. Similarly, Boyle et al. (1992), in their epidemiological studies estimated the male-

female ratio of CD prevalence at between 3:1 and 5:1. The American Psychological Association also reported that overall CD appeared more often in boys than in girls, with a rate of 6% to 10% for boys and 2% to 9% for girls (APA, 1994).

One of the reasons advanced for this occurrence is that males tend to exhibit more overt behaviors such as physical aggression and fighting as well as relational aggression, while females tend to exhibit more covert behaviors such as relational aggression, stealing, lying or running away (Diagnostic and Statistical Manual of Mental Disorders-V (DSM-V, 2013; Loeber et al., 2000). In this case, more males are likely to meet the criteria for CD because the items in the CD represent both aspects of aggression. The African culture assumes that a boy is grown up after the age of 13 years, soon after primary education and before joining secondary school. This gives male adolescents more freedom from the protective eye of parents. Left on their own, male adolescents might be predisposed to a greater risk of developing behavior problems which may result in CD (Tasha, 2011).

The results of CD prevalence based on age seemed to increase with age and was statistically significant at $p=0.008$. This finding is in line with a study done by Loeber et al. (1993b) that the onset of CD tends to peak in late childhood and early adolescence with higher prevalence being observed in late adolescence. According to DSM-5 (2013), as adolescents advance in age, they develop increased physical strength, cognitive abilities and sexual maturity, making them capable of more severe conduct problems such as rape or theft while confronting a victim. This was responsible for the higher CD prevalence rate for older adolescent, coupled with the less severe symptom behaviors such as lying and shoplifting which are the first to emerge at younger ages. The study observed a dip in prevalence at age 16, which could not be explained from the data and so was classified as incidental. Observation, however, revealed that the majority of 16-year-old students were in form one. The Kenyan culture of students being bullied when they join form one as noted by Ndeti et al. (2007) might make the form ones timid and therefore withhold exhibition of any behaviors that might expose them to more bullying.

With regard to religion, this study found that Catholics tended to have a higher prevalence of CD followed by Protestants and lastly Muslims. Islam religion seems to be more strict about adherence to its behavior standards and attendance of religious services. Levin and Taylor (1998) found that service attendance had a positive relationship to health and mental health outcomes. Protestants and Catholics, on the other hand, exhibit leniency to service attendance and are liberal. Muriungi, (2011) found similar results and advanced similar argument. The CD prevalence was lower in "other" religious groups. This study did not seek to investigate which these other religions were. It is recommended that a study be carried out to investigate what these other religious groups were that acted as protective factors for the respondents to having CD. Muslims too seem to have lower CD prevalence which could be attributed to their way of association and socialization which makes them strict on certain behaviors. Among the Catholics and the Protestants CD prevalence was higher, possibly because Catholics are quite liberal in the enforcement of moral issues as they can always make verbal confessions to their priests. On the other hand, Protestants seem to focus more on their adult

adherents' issues as opposed to teaching the children and youth on matters of character formation. Other researchers have found similar results in relation to CD/mental illness and religion and gave similar speculations (Muriungi, 2011).

The majority of the respondents came under mild degree of CD severity followed by moderate degree and severe, which were found to be statistically significant ($p < 0.001$). A study by Adieus (2013) found similar results where the degree of severity of CD before the introduction of the intervention packages was mild (52.2%), moderate (43.3%) and the severe was (4.4%). In another study by Sarkhel et al. (2006)/ mild CD was 36%, moderate was 64% and no severe CD was found.

The participants' parental socio-economic status (SES) was divided into three: low, medium and high. The study revealed that the SES of the respondents' parents was comparable ($p = 0.365$). A comparison between the different levels of severity of CD and SES also showed no statistical significance ($p = 0.698$). This means the SES of the parents had no bearing on the prevalence of CD in this study. The implication is that whatever level of SES of the parents, as long as they are within the informal settlement, the adolescents would be predisposed to similar factors that lead to CD. A study by Aneshensel and Sucoff (1996) agreed with this conclusion about neighborhood context of adolescent mental health, namely that adolescents in low SES neighborhoods are presented with greater hazards that predispose them to developing CD, regardless of their parents' SES.

Parents/guardians' marital status and their level of education were not statistically associated with respondents' CD ($p = 0.686$). It is however, noteworthy that the respondents who came from single parents' homes had a higher prevalence of CD (36.4%) followed by those who came from divorced/separated homes (33.0%). Single parents, whether by choice, widowed or divorced might be too busy trying to fend for the family, and as such, lack the time to spend with their growing children. Other studies agreed with this finding and argued that there was the likelihood of higher problem behaviors among children from single-parent families due to possible insecure attachments, parental neglect and abandonment which tend to place the adolescents at a higher risk of developing CD (Carr, 1999). On the other hand, Marshall and Watt (2005); and Rutter (1979) argued that separated parents might lack a coordinated approach on how to discipline their children, and teach or set behavioral standards leading to a lack of communication and confusion on the part of the children. This may lead them to act out and exhibit behavior problems which may result in CD.

Conclusion

The objective of this study was to investigate the prevalence of CD among sub-county secondary school students and analyze the relationship of CD and socio-demographic characteristics of the respondents. The results revealed that the overall CD prevalence was 31.4%; higher among male respondents (36.5%) than the female (26.7%). Higher prevalence of CD was also observed among the ages 17 to 18-year group (38.6% and 45.5%) respectively and lowest in ages 13 to 14 years (12.5%). Religious affiliation was found to impact the CD

prevalence with Catholics having the highest rate at (36.7%), followed by Protestants at (34.9%), Islam at (28.4%) and “other religions” at (23.2%). CD being this significantly high calls for policy action in schools. Appropriate psychological interventions are necessary to curb the emergence and caus3 of CD among the students. This would promote healthy, well-adjusted adolescents as well as ease the burden of the disorder on the parents of the affected adolescents, the school and the community at large.

References

- Agnew, R. (2005). *Juvenile delinquency: causes and control* (2nd ed.). Los Angeles: Roxbury Publishing Company.
- Agulamu, O. (2012). *Family dynamics and adolescent CD among Nigerian secondary school students*. Retrieved from www.study.mode.com/essays/family-dynamics-adolescents.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: APA.
- American Psychiatric Association. (2013). *Diagnostic manual for mental disorders* (6th ed.). Washington, DC: APA.
- Aneshensel, C. S., & Sucoff, C. A. (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*, 37, 293–310.
- Bauermeister, J. J., Canino, G., & Bird, H. (1994). Epidemiology of disruptive behavior disorders. *Child Adolesc Psychiatr Clin N Am.* 2, 177–194.
- Briggs, A. I., & Alikor, E. A. (2008). Conduct disorder among children in urban schools. *The Nigerian Health Journal*, 8, 3-4.
- Burke, J. D., Loeber, R., Lahey, B. B., Winters A., & Zera, M. (2000, December). Oppositional defiant and conduct disorder: A review of the past 10 years, part I. *J Am Acad Child Adolesc Psychiatry*, 39(12), 68-84.
- Carr, E. G., & Durand, V. M. (1999). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis*, 18, 111–126.
- Charan, J., & Biswas, T. (2013). How to calculate sample size for different study designs in medical research? *Ind. J of Psychological Medicine*, 35(2), 121-126.
- Dryfoos, J. D. (1990). *Adolescents at risk: Prevalence and prevention*. New York: Oxford University Press.
- Gillian, J. E. (2002). *Conduct Disorder Scale: Examiner's Manual*. Texas: Pro-ed.
- Green, H., McGinnity, A., Meltzer, H., Ford, T., & Goodman, R. (2004). *Mental health of children and young people in Great Britain: Summary report*. Newport: Office for National Statistics.
- Humaida, I. A. (2012). Prevalence of conduct disorders among primary school pupils in Khartoum, Sudan: Faculty of Arts & Sciences, Aljouf University, Tabarjal, Saudi Arabia. *Journal of Health*, 4(3), 125-132.
- Kanyora, J. N. (2014). *Factors contributing to patients by-passing the 2nd and 3rd levels of primary health care facilities in Kirinyaga Districts Kenya*. Kenyatta University Institutional Repository.
- Kim-Cohen, J., Caspi, A., & Moffitt, T. E. (2003). Prior juvenile diagnoses in adults with mental disorder: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry*, 60, 709–717.

- Kleintjes, S., Flisher, A. J., Fick, M., Railoun, A., Lund, C., Molteno, C., & Robertson, B. A. (2009). The prevalence of mental disorders among children, adolescents and adults in the Western Cape, South Africa. *South African Psychiatry Review*, 9(3), 157-160.
- Levin, J. S., & Taylor, R. J. (1998). Panel analysis of religious involvement and well-being in African Americans: Contemporaneous vs. longitudinal effects. *Journal for the Scientific Study of Religion*, 37, 695-709.
- Loeber, R. (1990). Development and risk factors of juvenile antisocial behavior and delinquency. *Clinical Psychology Review*, 10, 1-41.
- Loeber, R., & Dishion, T. (1993). Early predictors of male delinquency: A review. *Psychological Bulletin*, 94, 68-99.
- Marshall, J., & Watt, P. (2005). *Child behaviour problems: A literature review of the size and nature of the problem and prevention interventions in childhood*. Perth: WA.
- Muriungi, S., (2011). *Effectiveness of psycho-education on common mental disorders in students at the Kenya Medical Training College, Kenya* (Unpublished doctoral thesis). University of Nairobi, Nairobi.
- Mwaniki, M. (1999, May 26). Prefects die at Nyeri High. *Daily Nation*, p. 1.
- Ndetei, M. D., Othieno, J. C., Gakinya, B., Ndumbu, A., Omar, A., & Mwangi, J. (2004). *Traumatic grief in Kenyan bereaved parents following the Kyanguli School fire tragedy*. Nairobi: University of Nairobi.
- Network for International Policies and Cooperation in Education and Training (NORRAG, 2016). *Critical perspectives on education and skills in eastern africa on basic and post-basic levels*. Geneva: Graduate Institute of International and Development Studies.
- Nicholi, A. M. (1999). *The Harvard guide to psychiatry* (3rd ed.). Cambridge: Cambridge University Press.
- Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Med*, 9(11), doi:10.1371/journal.pmed.1001349.
- Nyakundi, O. (2014). Implementation of safety standards and guidelines in public secondary schools in Marani District, Kisii County. Kenya. *Journal of Education and Practice*, 5(13), 16-20.
- Odaló, B. (2001, March 27). Students perish on fire. *Daily Nation*, pp. 1-2.
- Odhiambo, R. A., Simatwa, M. W. & Ayieko, Y. (2013). Role of principals in promotion of girl-child education in mixed day secondary schools in Kenya: A case study of Rongo and Ndhiwa Districts: *Educational Research*, 4(2), 190-217.
- Ombati, C. (2008, July). Burning to death at Upper Hill School. *East African Standard*, p. 1.
- Oriang, L. (2001). Taking charge of the welfare of our children. *Daily Nation*, p. 5.
- Rutter, M. (1979). Protective factors in children's response to stress and disadvantage. In J. S. Bruner & A. Garden (Eds.), *Primary Prevention of Psychopathology*, 3, 49-74.

- Russo, M. F., Loeber, R., Lahey, B., & Keenan, K. (1994). Oppositional defiant and conduct disorders: Validation of the DSM-III-R and an alternative option. *Journal of Clinical Child Psychology, 23*, 56-68.
- Sarkhel, S., Sinha, V. K., Arora, M., & Desarkar, P. (2006). Prevalence of conduct disorder in school children of Kanke. *Indian Journal of Psychology, 5*, 6-7.
- Secondary Schools in Nairobi County. (2015, February). Retrieved from <http://www.advance-africa.com>.
- Shamsie, J. (2001). Conduct disorder: A challenge to child psychiatry. *Can J Psychiatry 46*(7), 593-594.
- Simatwa, E. M. W. (2007). *Management of student discipline in secondary schools in Bungoma District, Kenya* (Unpublished doctoral thesis). Maseno University, Kisumu, Kenya.
- Simons-Morton, B. G., Crump, A. D., Haynie, D. L., & Saylor, K. E. (1999). Student-school bonding and adolescent problem behavior. *Health Educ Res, 14*(1), 99-107.
- Tasha, D. (2011). *Rites of passage: African cultural initiation rites*. Retrieved from (<http://www.africaholocaust.net/ritesofpassage.html>).
- USDHHS. (1991). *Healthy people 2000: National health promotion and disease prevention objectives*. Hyattsville: Mayland.
- Woodward, L. J., & Fergusson, D. M. (1999). Early conduct problems and later risk of teenage pregnancy in girls. *Dev. Psychopathol, 11*(1), 127-141.