DISRUPTIVE BEHAVIOR DISORDERS AMONG SCHOOL-GOING CHILDREN AGED 6-12 YEARS IN NAIROBI COUNTY

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DECLARATION

This thesis is my original work and has not been submitted for award of a degree in this or any other university.

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SUPERVISORS' APPROVAL

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ABBREVIATIONS AND ACRONYMS

ADHD   Attention Deficit Hyperactivity Disorders

APA   American Psychiatric Association

CBD   Central business district

CD   Conduct Disorders

CDC   Centres for disease control

DBD   Disruptive Behaviour Disorders

DSM   Diagnostic statistical manual

ODD   Oppositional Defiance Disorders

NACOSTI   National Commission for Science and Technology and Innovation

PPS   Probability proportional to size

PTSD   Post-traumatic stress disorder

SPSS   Statistical packages for social sciences

DEFINITION OF KEY TERMS

a)   **Attention Deficit Hyperactivity Disorder** is a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development**.** **Inattention** manifests behaviorally in ADHD as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized and is not due to defiance or lack of comprehension.

b)   **Hyperactivity** refers to excessive motor activity when it is not appropriate or excessive fidgeting, tapping, or talkativeness. Impulsivity refers to hasty actions that occur in the moment without forethought and that have high potential for harm to the individual

c)   **Oppositional Defiance Disorder** is a frequent and persistent pattern of angry/irritable mood, argumentative/defiant behavior.

d)   **Conduct disorder** (CD) is a mental disorder diagnosed in childhood or adolescence that presents itself through a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate norms are violated. These behaviours are often referred to as "antisocial behaviours, or vindictiveness.

ABSTRACT

Introduction: Disruptive Behavior Disorders (DBDs) are a common co-occurring condition of childhood onset and are of significant public health concern. Yet, the prevalence of these conditions among Kenyan Children is not known.

Study Objective: The aim of this study was to determine the prevalence of DBDs among school-going children aged 6- 12 years in, Nairobi, county.

Methods: A descriptive cross-sectional survey was adopted. A sample size of 384 respondents selected through stratified random sampling was used in this study. Disruptive Behavior Disorders Rating Scale and a socio-demographic questionnaire was used to collect data.

Data Analysis: Data was analyzed by use of SPSS version 23. Descriptive statistics such as measures of central tendency was used to analyse data. Association between variables will be determined using Pearsons chi square. Correlations was determined using Pearsons correlation test or Cramers V for categorical variables

Findings: The study found that 16.2% (61) of the respondents' children had oppositional defiance disorder. It also established that 14.4% (54), had conduct disorder. As for respondents that indicated that their children exhibited ADHD symptoms and other non-specified Disruptive behaviors, they represented 9.0% (34) of the total sample population. Most of the respondents' children did not have disruptive behavior disorder, they represented 60.4% (227) of the total sample population. Children's gender was significantly associated with DBDs

Conclusion: There is a high presence of behavioral challenges and ADHD symptoms among school going children, aged 6 to 12 years, in Nairobi. Given that the negative outcomes are associated with behavioral challenges as children transition to adolescence and adulthood, detecting these emerging behavioral challenges early is critical in developing appropriate interventions.

CHAPTER 1: INTRODUCTION

1.1 Background of the study

Disruptive Behavior Disorders (DBDs) as categorized in diagnostic statistical manual volume four translated version (DSM IV-TR) taxonomy were Attention Deficit Hyperactivity Disorder (ADHD), Oppositional defiance disorders (ODD) and conduct disorders (CD) with symptoms persisting into adulthood in as many as 60 percent of cases (Hawes, 2014). In the diagnostic statistical manual volume five (DSM V), these disorders had been grouped together under the disruptive, impulse-control, and conduct disorders category (APA, 2013). It brought together disorders that were previously included in the chapter "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" (i.e., oppositional defiant disorder; conduct disorder; and disruptive behavior disorder not otherwise specified. In that new category, attention deficit hyperactivity disorder had been left out and instead had been grouped under the neuro- developmental disorders (APA, 2013), however it had been noted as a common comorbidity. The main symptoms in these disorders were issues in emotional and behavioral self-control.

Some of the disruptive behaviours noted in childhood were temper tantrums, impatience, interrupting others, impulsivity with little regard for safety or consequences, showing aggression, oppositional behaviour or defiance and other socially inappropriate acts (Kaminski & Claussen, 2017).

In the Global Burden of Disease Study, a landmark in global health knowledge and evidence, reported that disruptive behaviour disorders were leading mental health related causes of the global burden of disease in children (Patel & Prince, 2010). According, Patel,

Kieling, Maulik, & Divan (2013), disruptive behaviour disorders contributed to a great burden of disease among school going children globally since quite a number were diagnosed with oppositional defiance disorder and attention deficit/hyperactivity disorder as a comorbidity at a very early age. On the other hand with many children diagnosed with attention deficit hyperactivity disorder at an early age, it had been found that approximately two thirds of children with attention deficit hyperactivity disorder had at least one disruptive behaviour disorder as comorbidity (Kutlu, Ardic, & Ercan, 2017).

According to diagnostic statistical manual volume five (DSM V), oppositional defiant disorder (ODD) was characterized with antagonist nature or mood, argumentative, defiance, disobedience, hostility towards authority figures or vindictiveness (APA, 2013). These behaviours had to be recurrent for about 6 months. Most children and adolescents at one point or another exhibited such symptoms, however, in children and adolescents diagnosed with oppositional defiant disorder, these symptoms were exhibited more frequently than in other children. These symptoms also seemed to significantly interfere with their ability to function socially or in an academic setting. These behaviours must be exhibited more frequently than in other children of the same age and must cause significant impairment in social, academic or occupational functioning to warrant the diagnosis (APA, 2000).

Though it was said that conduct disorder was qualitatively different from oppositional defiant disorder based on the overall description of the behaviour, the two disorders mostly had the same symptoms. In conduct disorder however, it was considered as violation of social norms as per the child's and adolescent's age and also violation of people's rights (APA 2013).

Conduct disorder (CD) involved more serious behaviours including aggression toward people or animals, destruction of property, lying, stealing and skipping school. The behaviours associated with conduct behaviour were often described as delinquency. As mentioned earlier, both of these disorders together were known as disruptive behaviour disorders (DBDs), the concept of which was conceived almost 50 years ago.

Steiner & Remsing (2007), found that disruptive behaviour disorders progressed. In their study, they found that at least two thirds of children who had oppositional defiant disorder would not meet the diagnostic criteria after 3 years and instead they had progressed to having conduct disorder. The researcher also found that nearly half of the adolescents that would be diagnosed with conduct disorder would eventually had developed antisocial personality disorder especially with no intervention in place earlier in life.

Studies done on conduct disorder and oppositional defiant disorder had shown that it was common to diagnose attention deficit hyperactivity disorder as a comorbidity. The vice versa had also been noted where attention deficit hyperactivity disorder was diagnosed as a primary disorder and the conduct disorder or oppositional defiant disorder was diagnosed as a comorbid disorder. Attention deficit hyperactivity disorder was a neuro-developmental behavioural disorder, that was usually first diagnosed during childhood in about 3% -7% school age children, while others were diagnosed during early school years after experiencing adjustment difficulties with symptoms becoming more evident during the adolescence stage (APA, 2013) . Despite the fact that there lacked a global consensus on the actual prevalence of attention deficit hyperactivity disorder among children, results from meta-regression reported estimates of around 5.3% (Polanczyk, de Lima, & Horta, 2007) to 7.1 percent (Willcutt,

2012). Though very few studies had been done on attention deficit hyperactivity disorder (ADHD) amongst schools in Kenya, the few published confirmed the presence of disruptive behaviour amongst the children which had led to significant impaired functioning in their social and school functioning (Kanyithia, 2017).

Numerous psychosocial risk factors had been identified. Biological factors, especially with the help of newer neuroimaging techniques, and brain substrates for disruptive behaviour disorders (DBDs) had been explored. Studies had been conducted to find the best possible preventions and interventions. However, there was still dearth in studies on disruptive behavior disorder (DBD) which pointed to the need for research on the subject, especially in the Kenyan context where research and data in the area was limited and in most cases underestimated. There was need for research on disruptive behaviour disorders (DBDs) among children in Kenya with a view of exploring the possibility that these conditions may be present and as such develop better identification and treatment plans before the affected children reached the disruptive stage of adolescence.

1.2 Statement of the Problem

In the recent past both print and electronic media had carried out shocking coverage of immoral behaviour involving the Kenyan young people. Some of the shocking incidents included a case where a group of 40 high school boys in Elgeyo Marakwet raided a girls' school dormitory after an exchange of short text messages with some girls (Sila, 2017). Three days later, there was a reported case of a group of 45 high school students on board a Karatina-Nairobi bus who were intercepted by police and found to be in possession of alcoholic drinks, bhang and engaging in sexual practices (Ngunjiri, 2017). Still in another stunning incident, five girls and three boys all in high-school in Kisumu were arrested on

9th October 2015 for allegedly engaging in sexual activities (Otieno, 2015; Chepkoech, 2015). In a record breaking experience of the recent past, a group of 550 teenagers were caught in a pub in Eldoret town and found to be in possession of alcohol, bhang, miraa, condoms and allegedly engaging in poly drug abuse and sexual orgies (Lagat, 2015).

All the above incidents could be a pointer to developmental and behavioural problems among the young people of this country with anecdotal evidence suggesting that some of these behaviours had started during childhood. There was a huge consensus among different players that children and adolescents of today were experiencing myriad of developmental and copying challenges emanating from, absentee parents, condemnation from significant others, schooling pressures, peer pressure and unguided use of social networking sites (Nzelsyva, 2008). There was however a dearth of information on whether the observed cases of hooliganism and other wayward behaviour exhibited by our young-people could be due to underlying disruptive behaviour disorders that had started during childhood.

Moreover, available research did not provide adequate demographic and descriptive data of children with disruptive behaviour disorders in the Kenyan context. Until research was carried out to explore the dynamics surrounding oppositional defiant disorder, conduct disorder and non-specified disruptive behaviour disorders among children in their early years, there continued to be disparities in identification, access to treatment, and reports of the manifestations of these conditions.

1.3 Justification

Children with disruptive behaviour disorders (DBDs) were at increased risk for a number of problems in adjustment as adults, including antisocial behavior, impulse-control problems, substance abuse, anxiety, and depression. Important changes in human brain occurred during childhood and adolescence making the period more vulnerable (Luciana, 2013). First signs of mental illness and co- morbid disorders that started during childhood persisted to adolescence. Children with disruptive behaviour disorders often had more difficult lives and poorer outcomes. Having disruptive behaviour disorders could not only complicate the diagnosis and treatment but also worsened the prognosis of oppositional defiant disorder and conduct disorder. The high co- occurrence of oppositional defiant disorder and conduct disorder necessitated that all children with disruptive behaviour disorder (DBD) symptoms be assessed with a view to exploring the possibility that both oppositional defiant disorder (ODD) and conduct disorder (CD), may be present in addition to attention deficit hyperactivity disorder (ADHD) as a prelude for better treatment planning. Early diagnosis and treatment of these conditions was by far the best defense against these poorer outcomes.

There was wide consensus among policy experts that meaningful interventions targeting young children and adolescents must be based on empirical research targeting this group with the aim of tracking the developmental milestones and possible mental disorders that the young people face (APA, 2000). Further-more in order to prevent further psychosocial problems for children with disruptive behaviour disorders, research was needed to determine the effectiveness of interventions and strategies that could be utilized.

1.4 Overall objective

To determine the prevalence of disruptive behavior disorders among school-going children aged 6- 12 years in Nairobi County.

1.4.1 Specific objectives

i.   To determine the prevalence rate of oppositional defiant disorder, conduct disorder and Non-specified disruptive behavior disorders among school-going children aged 6- 12 years in Nairobi County.

ii. To establish the socio-demographic characteristics of school-going children aged 6- 12 years in Nairobi County presenting with disruptive behavior disorders

iii. To determine if there was a relationship between morbidity of Disruptive disorders and socio-demographic factors

1.5 Research Questions

i.   What is the prevalence of oppositional defiant disorder, conduct disorder and Non-specified disruptive behaviour disorders among school-going children aged 6- 12 years in Nairobi County?

ii. What are the socio-demographic characteristics of school-going children aged 6-12 years in Nairobi County presenting with disruptive behavior disorders?

iii. Is there a relationship between morbidity of Disruptive disorders and socio-demographic factors?

1.6 Significance of the Study

The proposed study was expected to contribute to the available knowledge on the subject of disruptive behaviour disorders among School going Children. The recommendations from the study were expected to contribute to the much needed care for the affected children since children with opposition defiant disorder and conduct disorder and probably attention deficit hyperactivity disorder were often more impaired than children with either disorder alone. The study hoped to provide parents of children who met the criteria for oppositional defiant disorder or conduct disorder with an understanding of normal versus abnormal concerning behaviours given their children's developmental phases while emphasizing parenting styles that recognizes strengths of the child, uses positive reinforcement and provides effective limit-setting and non-punitive punishment. The study also provided a background for future research in that area.

1.7 Scope of the Study

The study was restricted to primary school pupils sampled from Nairobi County alone. The survey focused on standard 1 to 4 Pupils (lower primary section) drawn from the sampled schools. The study specifically sought to determine the prevalence of opposition defiant disorder and conduct disorder and attention deficit hyperactivity disorder which was a common comorbidity. Therefore, the findings did not reflect the totality of the primary school with regard to their total populations.

1.8 Conceptual Framework

The conceptual framework for the prevalence and presentation of Disruptive Behavior Disorders (DBDs) was presented in Figure 2.1. It comprised of the following major components/variables. Oppositional defiant disorder, and conduct disorder as the outcome

variables or disruptive behavior disorders. Age, gender and psychological factors e.g. difficult temperament were the main predictor variables. Socio- economic status, parenting style, family size, and environmental factors were the moderating variables.
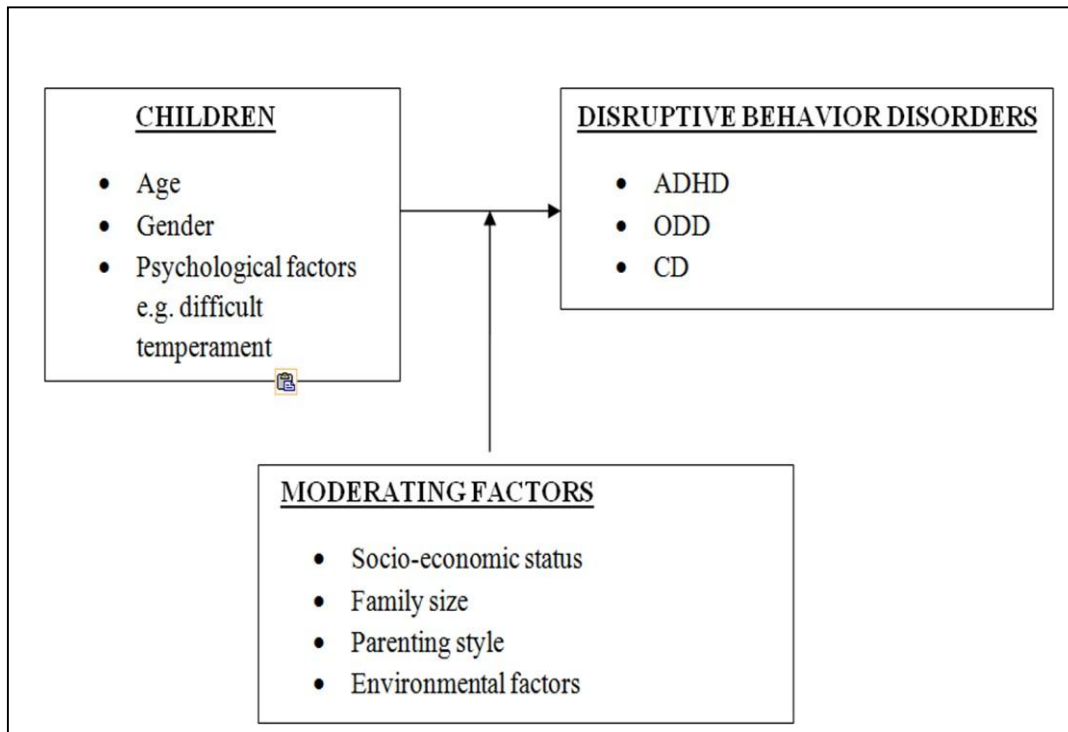
Figure 2.1: Conceptual Framework
Author: Okoba K. Grace_2019

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The chapter presents a discussion of the studies done on oppositional defiance disorders and attention deficit hyperactivity disorder. The conceptual framework of the study will also be presented and discussed.

2.2 Prevalence and Presentation of ODD and CD

Disruptive behavior disorders of childhood include ODD, CD and disruptive behavior not otherwise specified (APA, 2013). Other disorders that frequently co-occur with DBDs are ADHD and intermittent explosive disorder (IED). Children or adolescents that exhibit behaviors and associated consequences that "violate the rights of others or bring the individual into significant conflict with societal norms or authority figures" qualify for the diagnosis of DBD.

ODD and CD are known to share some antecedent risk factors and are both defined by challenging interactions with parents and other authority figures. Thus, they are often presented as a single category in prevalence and epidemiologic studies. However, several studies have shown that significant differences exist between the two; for example, there are inconsistent findings about gender differences in ODD, but CD has a very marked male-to-female risk ratio.

These authors thus recommend reporting and studying these conditions separately (Maughan, et al., 2004; Burke, Rowe, Boylan, 2014). In item analysis on risk scales, the two conditions overlap greatly, but they still appear to be separate constructs (Cavanaugh, 2017).

Current guidelines for assessing ODD and CD in young children were issued in 2007 and 1997, for ODD and CD, respectively, by the American Academy of Child and Adolescent Psychiatry (Steiner & Remsing, 2007). The correct diagnosis for these conditions requires a thorough evaluation that includes interviews with the child, the key caregiver, and secondary informants, such as teachers. Standardized reporting tools are recommended for collecting full data from multiple informants. However there still exits no tool specific for these conditions, nor are there any biological markers for these disorders. Also unclear is whether the demarcation between ODD and CD is crucial for the treatment and care of affected patients. It is important to note that because the diagnosis of ODD and CD as well as their symptoms are entangled in families or significant others as well as social interactions, the recommendations should emphasize the key role played by clinicians, their family or significant others and patient in the continuum of care.

A diagnosis of ODD and CD is made when children or adolescents present with aggression or related behaviours that result in persistent problems, including legal and social consequences, and when other causes are not present. These conditions usually do not remit quickly, and often present along a continuum, so ongoing care and follow-up is necessary.

2.3 Co-occurrence and Psychosocial Problems Linked to ODD and CD

ODD and CD are both known to have high rates of co-morbidity, particularly with ADHD and mood and anxiety disorders (Chen, et al., 2013). Children with ODD not only have high rates of co morbid mood disorders, but they even retain some of these other diagnoses when their ODD remits (Nock, Kazdin, Hiripi, Kessler, 2007). According to parent and teacher reports, ODD almost always has associated mood, anxiety, or PTSD symptoms (Loeber et al., 1993; Cavanagh, 2017; Copeland, Angold, Costello, Egger, 2013). A past

meta-analysis has demonstrated that the likelihood of ADHD co-existing with CD is 10.7, the chances of CD co-existing with depression is 6.6, whereas the chances of CD co-occurring with anxiety disorder is 3.1 (Angold, Costello, Erkanli; 1999) Substance abuse disorders also regularly co-exist with DBDs are a common symptom of CD (Angold, Costello, Erkanli; 1999). Owing to the regular clinical appearance of symptoms related to mood in association with behavioral problems, the DSM-5, includes disruptive mood dsyregulation disorder, a new condition that requires both behavioral and mood symptoms (APA, 2013). However, there is a paucity of data on prevalence on the same. Based on the above, it is evident that hyperactive-impulsive behavior that begins early in life is a risk factor for the occurrence and progression of ODD and CD. Yet studies have continuously shown that impaired parenting together with parent psychopathology is among the key predictors of which children progress from being ADHD only to developing ODD (Goldstein, 2007; Harvey, Metcalfe, Herbert & Fanton; 2011). The emergence of ODD is then a risk factor for concurrent or later CD, anxiety, and depression. And all two externalizing disorders (ODD, and CD) are predictors of later adult criminal behavior and arrest rates specially with comorbid ADHD (Copeland, et al., 2013).

2.4 Predisposing Contextual Factors

According to available research, the risk factors for DBDs are not clearly understood; however, it appears that genetic, environmental, and family factors all play a role (Copeland, et al., 2013; Cavanagh, 2017). A review of a child's history should involve prenatal exposures, exposure to adverse childhood experiences, and cognitive or other developmental problems. Also important is to assemble a history of the current illness, including age of onset, the environmental conditions in which the symptoms are manifest,

the period and severity of the symptoms, and any presenting situations that improve or worsen the problems should be noted(Copeland, et al., 2013; Cavanagh, 2017).

An assessment of underlying psychiatric, substance abuse, ADHD and trauma-related symptoms should also be done. Since ODD and CD are known to congregate in families, it is recommended that one gets a family history of the medical and psychiatric disorders. In addition, the role of the family communicative, emotional, coping patterns, interactional as well as resources ought to be assessed. Information about a child's functioning in a school setting should be established from the appropriate staff, including school principal, teachers, nurse and school guiding and counseling teacher once the right ethical provisions have been followed. Teacher reports of problem behavior using structured forms are key. Suspected impairment in intellectual functioning, motor as well as communication abilities should be evaluated. ODD and CD from the onset often involve social service departments including juvenile justice and foster care and as such reports from these departments touching on symptoms as well as consequences are key to proper diagnosis, treatment and follow-up.

A comprehensive physical examination should be done to rule out medical problems. Medical conditions that cause agitation, aggression, or impulsive anger need to be looked at. Routine laboratory tests such as renal and liver functions, blood counts, thyroid functions, toxicology screen, a pregnancy test, and urinalysis are usually not indicated unless specific history or examination findings highlight the need. However, preventive screening for HIV, depression, and substance abuse are all indicated when age appropriate.

2.5 Demographic Factors and Duration of the Disorder

Age and gender trends in ODD are not marked, with a few studies suggesting that boys are more likely to present with symptoms of ODD than girls, with others however, showing no gender differences (Nock, et al., 2007). In one of the largest and well-designed studies, boys were much more likely report ODD symptoms, with most of the additional symptoms being by teachers who however have not been used in many epidemiologic studies (Maughan, Rowe, Messer; 2004). Based on the same study, the decline in ODD as reported in many studies is based on whether ODD and CD are made exclusive because the symptoms do not disappear, but CD diagnoses replace ODD.

2.5.1 Disruptive Behavior Disorders and Age

Age has been noted to influence the prevalence rates and presentation of CD, albeit in subtle ways. Although ODD is seen to remit with age, this is not very clear for CD. These conditions are usually considered exclusive in prevalence estimates, and thus this may simply be the result of reclassifications. From past studies, it is not very clear if CD symptoms increase with age, but the severity of symptoms and aggression have been observed to increase as youth's age. From past data in three different samples, Copeland and colleagues were able to demonstrate that up to 3 percent of preschoolers could be affected (Copeland, et al., 2013).

Neither of these conditions is thought to be short-lived. ODD remits in roughly half of the population after 3 years (Bierdman, et al., 2008; Bunte, et al., 2014) although the conversion to CD in these cases may not have been taken into account.

2.5.2 Influence of Socioeconomic Status on DBD

Both ODD and CD are more prevalent in children and adolescents from low-income households. Although, neighborhood and environmental factors also play a role in producing these symptoms, the poorest and most violent neighborhoods have the highest proportion of ODD and CD symptoms (Loeber, 2000). Low household income as well as low parental educational attainment are also reported to be associated with higher rates with these characteristics being thought to influence prevalence through disciplinary practices, scarcity, food insecurity, and their influence on access to peer support (Perou, 2013). Less clear is whether or not these findings extend to rural areas.

2.6 Summary

This chapter presents a discussion on disruptive behavior disorders, their prevalence, co-occurrence and predisposing contextual factors.

CHAPTER 3: METHODOLOGY

3.1 Study Design

The study design was cross-sectional. Which enabled the researcher to analyze data from the group of respondents at one point and time. Cross-sectional studies also allowed for data collection over a short period of time.

3.2 Study Site

The study took place in Nairobi County which had 17 sub-counties and a total of 225 primary public schools distributed across these sub counties. The public schools in the county enrolled children from all types of homes, with different socio-economic background and varied backgrounds. The study site therefore was appropriate as it considerably reduced bias.

3.3 Study Population

The target population constituted parents or caregivers of primary school children aged 6-12 years attending these primary schools. As mentioned, these disorders being studied, commenced in childhood and adolescence and a primary care giver was able to confirm presence of these symptoms as opposed to observation done for minutes during data collection by the researcher.

3.4 Exclusion and Inclusion Criteria

3.4.1 Inclusion Criteria

To participate in this study, subjects were required to:

Be parents or guardian of children aged 6-12 years

Consent to participate in the study

Had lived with the child from age 5yrs and continued to do so

3.4.2 Exclusion Criteria

Subjects were excluded if they:

Had not lived with the child (hadn't raised the child)

3.5 Sample Size Determination

The estimated total number of primary school children between 6 and 12 years in Nairobi public primary schools was over 10,000. Total sample size for the whole study was to be arrived at using the formula suggested by Fisher, Laing and Stoeckel (43) for populations that were 10,000 and larger.

$$n = \quad\quad Z^2\, \alpha/2\ pq\ d2$$

$$n = \frac{(1.96)^2\ (0.50)\ (0.50)}{(0.50)2} = 384$$

n = the desired sample size (if the target population is greater than 10,000)

z = the degree of confidence (in this case 95% confidence interval, ά=1.96)

p = the proportion in the target population estimated to have characteristics being measured. 50% chosen as recommended by Fisher et al., (1985)

d = the level of statistical significance (set at 5%)

3.6 Sampling procedure

First step in sampling was randomization. This was done using SPSS where by the number of schools that were included in the study was selected without bias. The researcher targeted 10 schools in the county.

Once the 10 schools had been randomly selected, only 38 parents of students who were between the ages of 6 to 12 from each school were randomly selected to participate in the study. Random selection was done by putting the phone numbers of each parent in a jar and selecting 38 numbers. The researcher then called the parents asked if they would participate in the study.

3.7 Pre-test

Pre-test of the questionnaire was done before actual data collection on a sample of 10 parents from a school that was not included in the study (any school that was not selected after randomization). The level of understanding of the questions was assessed. Ambiguous and vague questions were rephrased to convey the same meaning to all participants while some comments made by the respondents were incorporated into the final questionnaire.

3.8 Research Instruments

Two study instruments i.e. the social demographic questionnaire as well as a Disruptive Behavior Disorder (DBD) rating scale developed by Pelham, Gnagy, Greenslade, & Milich (1992), were used for data collection.

The Disruptive Behavior Disorder rating scale consisted of 45 items with response categories ranging from not at all (0) to very much (3) and takes about 10 minutes to administer. DBD Parent/Teacher rating scale included 9 items related to symptoms of

ADHD-Inattention, 9 items for ADHD-Hyperactivity/ Impulsivity, CD (15 items), and ODD (8 items). Moreover, the ADHD subscale also measured ADHD combined type (items, 9, 18, 23, 27, 29, 34, 37, 42, 44, 1, 7, 12, 19, 22, 25, 30, 33, & 35) in children. If 6 or more items are endorsed for ADHD-Inattentive type, and 6 or more items are endorsed for ADHD-Hyperactive/Impulsive type, then criteria is met for ADHD-Combined Type. Conduct disorder subscale measured symptoms related to aggression towards people and animals, destruction of property, deceitfulness or theft, and serious violation of rules. All items of the DBD rating scale were completely in accordance with the DSM-IV diagnostic criteria (APA, 1994). The scores of the scale had shown good reliability and validity across multiple different study samples (Silva, et al., 2005; Friedman-Weieneth, Doctoroff, Harvey, & Goldstein, 2009).

3.9 Recruitment Strategy

Once the school had been selected, institutional authority was sought. Once obtained, 38 phone numbers of the parents randomly selected from the school registry was used. The researcher then called the parents to ask if they were participating in the study.

The researcher organized for one day for each school to get the parents to fill in the questionnaires which was determined by the rate of response, availability of participants and their level of enthusiasm. If a parent refused to participate in the study, then another parent was randomly selected, called and asked to participate.

The researcher intended to collect data for approximately 4 weeks with each week set aside for 9-10 schools that was selected through randomization. Once the respondents had accepted to participate, data collection proceeded only after they were read for and

explained to the consent form. Their participation was voluntary and the signed consent forms reflected this agreement. Once they had signed the consent forms, the data collection process was commenced.

3.10 Data Collection Procedure

The researcher sought permission from the KNH/ERC and Nairobi County Education departments before starting data collection. The researcher also sought the consent of school administration before embarking on data collection. The researcher also sought permission to use a room in the school for data collection for one day.

As mentioned, consent from all participants was also sought first at the study site. A consent form was issued to the respondents who agreed to participate in the study prior to being the study instruments. The researcher then administered the socio-demographic questionnaire and the DBD rating scale to the respondents to fill. The researcher stored the filled in questionnaires after completion.

The questionnaires were researcher - administered to ensure that the parents fully understood the questions. The tools were also translated into Kiswahili for easy administration by researcher in some cases.

3.11 Flow Chart for Data Collection
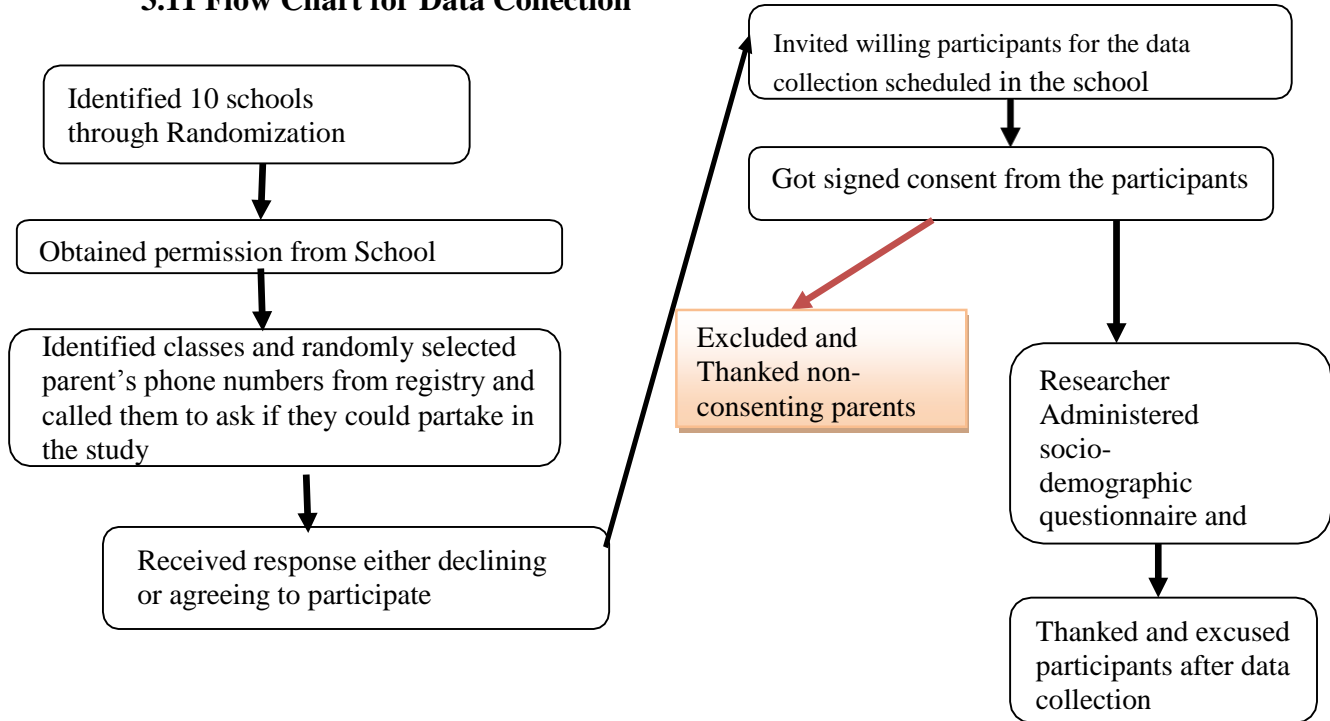
3.12 Data Management & Analysis

Once filled the collected forms were kept safely. The statistical package for social sciences (SPSS) version 23 was used to analyze the data. Finally, frequencies were presented in form of tables, pie charts, and bar graphs. Measures of Central tendency like the mean, mode and medium was used to describe socio-demographics variables such as age and years of living with the child. Association between variables was established through Pearson's chi- square. Correlations was determined through Pearson's correlation or Cramer's Phi for categorical variables. Predictive analysis was done through multi regression analysis.

3.13 Ethical Considerations

The approval from the Hospital and University of Nairobi ethics and research committee, Nairobi County education department and the study site administration was sought before

the data collection started. Respondents' consent was obtained before they could fully participate in the study. The informed consent explanation had information about the research objectives, the benefits of the study and the fact that the study was not posing any physical harm to the participants. However, participants may experience psychological distress in which case appropriate referrals were made for management as per severity. The researcher referred patients to Kenyatta National Hospital for further psychiatric evaluation of mood disorders or if it was a situational condition.

If through the parent's responses, the researcher's evaluation concluded that the children were suffering from these disruptive disorders then referral for psychiatric evaluation at the KNH mental health children's clinic was done.

Participants were assured of confidentiality and anonymity because no names were recorded anywhere on the tools but instead, codes were used.

Objectivity was upheld during data collection to ensure that bias was reduced. The researcher made no assumption for the participants.

3.13 Study Limitations

The anticipated limitation in the study was availability of parents willing to participate in the study. Unaware of their schedule it was difficult to predict if the parents were willing to come to school to participate in the study. However, the researcher intended to continue the random sampling until the target population per school was reached. Funding was also a limitation of the study as the researcher had to collect data from 10 schools and refund parents' transportation costs for participating in the study.

CHAPTER 4: RESULTS

4.0 Introduction

This chapter entails the analysis of the data collected. The results are presented according to the study objectives which were:

1. To determine the prevalence rate of oppositional defiant disorder, conduct disorder and non-specified disruptive behaviour disorders among school going children aged 6 to 12 years in Nairobi County

2. To establish the socio-demographic characteristics of school going children aged 6 -12 years in Nairobi County presenting with Disruptive Behavior Disorders

3. To determine if there is a relationship between morbidity of Disruptive Behaviour Disorders and socio- demographic factors

4.1 Response Rate

The sample size population for the study was 376 out 384 respondents; therefore, the response rate was 97.9%. 8 respondents' questionnaires were erroneously filled and therefore the data was excluded during data cleaning. As per the ethical requirements, all the respondents participated in the study once they signed the consent forms.

4.2 Respondents' Socio Demographic Profiles

Table 4.1 presents socio-demographic characteristics of the respondents who were parents or guardians of children between the ages of 6 to 12yrs who participated in the study. The mean age of the respondents was 39.6yrs (SD. ±7.367), the mode was 39yrs and the median 40.0yrs.

The mean age of the respondents' children was 8.68 years (SD. ± 1.833), the mode was 9 and the median was 9yrs. The mean and median were similar indicating that children's ages was distributed evenly across the study population.

Forty-five point five percent (45.5%; (171)) of the respondents were male while 54.5% (205) were female. As for the children; 57.7% (217) were male while 42.3% (159) were female. Majority of the parent indicated that they had 1 child.

Fifty-two point seven percent (52.7% (198)) were married while 21.8% (82) were cohabiting and 3.5 %(13) were divorced or separated, 5.1% (19) were widowed and 17.0% (64) were single.

Eleven point two percent (11.2% (42)) of the respondents had completed primary school, 26.3% (99) had completed secondary school education, and 47.6 % (176) had been or were still in to college or university. Fourteen point nine percent (14.9 % (56)) had started or completed their post graduate degrees.

Most of the respondents 29.8% (112), worked for organizations that were not government affiliated, 25.3 % (95) were self-employed while 15.7 %(59) indicated that they were government employees. Nine point six percent ((9.6%, 36) were either working as volunteers or were on internship which was unpaid while 19.7% (74) of the respondents indicated that they were students.

Overall, the employed respondents were 70.7% (266) while the unemployed ones were 29.3% (110).

Most of the respondents earned salaries between Kshs.5001 to 15,000. They represented 32.7% (123) of the sample population. Twenty-six point three percent (26.3%, (99)), reported that they had no income. Respondents that earned between Kshs.15001 to 25000 were 15.4% (58) while those that earned below Kshs.5000 were 16.2% (61). Three point seven percent (3.7%, (14)) of the respondents earned between Kshs. 25,000 to 40000 while 5.6% (21) earned Kshs. 40,000 plus.

Table 1: Respondents Socio-Demographic Profiles

Variable		Outcome 376/100%	
		Frequency (n)	Percentage (%)
Gender of Parents	Male	171	45.5%
	Female	205	54.5%
Marital Status	Single/ Never Married	64	17.0%
	Married	198	52.7%
	Cohabiting	82	21.8%
	Divorced/ Separated	13	3.5%
	Widowed	19	5.1%
Age (years)	18-24yrs	6	1.6%
	25-34 years	87	23.4%
	35-44 years	204	56.9%
	45-54 years	70	18.9%
	>55 years	9	0.8%
Level of education	Primary	42	11.2%
	Secondary	99	26.3%
	College/ University	179	47.6%
	Post Graduate Degree	56	14.9%
Occupation Status	Employed	268	71.3%
	Unemployed	108	28.7%
Salary Range	<5000	61	16.2%
	5001 -15000	123	32.7%
	15001- 25000	58	15.4%
	25001-40000	14	3.7%
	>40001	21	5.6%
	No Income	99	26.3%
Gender of Children	Male	217	57.7%
	Female	159	42.3%

4.3 Disruptive Behavior Disorders in the Children

The study found that 16.2% (61) of the respondents' children had oppositional defiance disorder. It also established that 14.4% (54), had conduct disorder. As for respondents that indicated that their children exhibited attention deficit hyperactivity disorder symptoms and other non-specified Disruptive behaviors, they represented 9.0% (34) of the total sample population. Most of the respondents' children did not have disruptive behavior disorder, they represented 60.4% (227) of the total sample population.

Figure 4.1 illustrates the above findings.

Respondents' Disruptive Behaviour Disorders

61, 16.2%

54, 14.4%

227, 60.4 %

34, 9.0 %

■ ODD
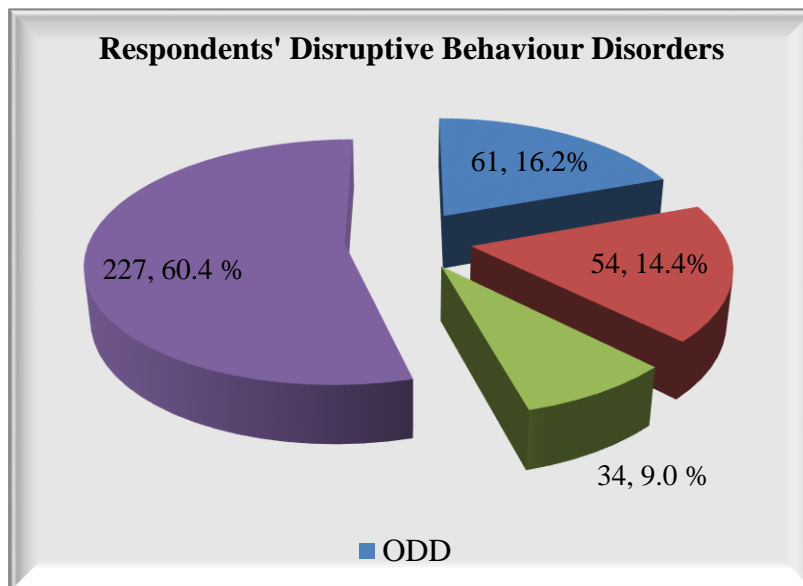
Figure 4. 1: Disruptive Behavior Disorders in the Children aged 6 to 12years

4.4 Prevalence of Disruptive Behavior Disorders

As shown in Figure 4.2, the prevalence of the disruptive behavior disorders was 39.6% (149). This figure was calculated by summing up the number of children with oppositional defiant disorder, conduct disorder and non-specified disruptive behaviors disorders.
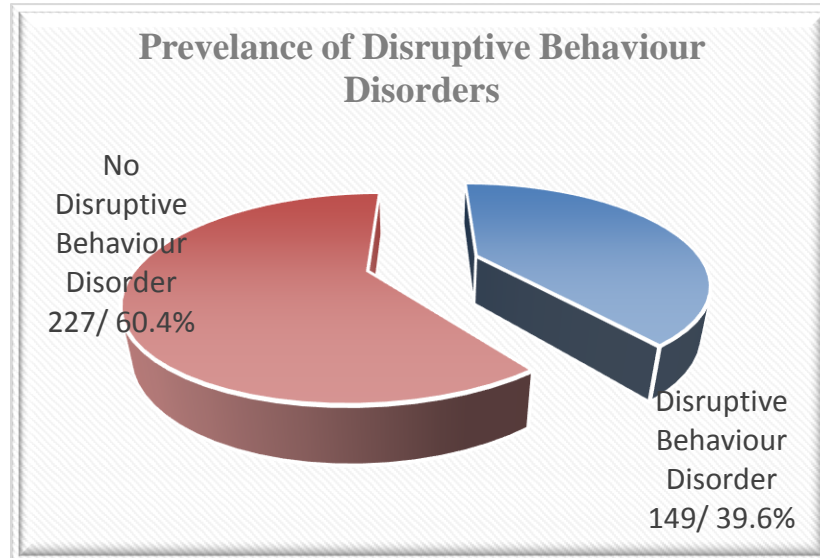
Figure 4.2: Prevalence of Disruptive Behaviour Disorders

4.5 Association between Socio-demographic Factors and Disruptive Behavior Disorders

To establish association between socio-demographic factors and disruptive behavior, the Pearson chi square test was done. Being that all the variables are categorical, to establish the correlation strength of relationship and effect of independent variable on dependent variables, Cramer's Phi Coefficient test was carried out for significantly associated variables.

As indicated in Table 4.2, children's gender was significantly associated with disruptive behavior disorder at a p= 0.048.

The effect that children's gender had on disruptive behavior disorder was moderate at a Cramer's V of 0.202.

Table 2: Association & Correlation between Socio-Demographic Factors & DBDs

Variable		Prevalence of DBDs		Chi Square (P Value)	Correlation statistics (Cramer's V)
		DBDs	No DBDs		
Children's Gender	Male	77(20.5%)	140(37.2%)	0.048	0.202
	Female	50(13.3%)	109(29.0%)		
Parents' Gender	Male	58(15.4%)	113(45.5%)	0.958	
	Female	69(18.4%	136(36.2%)		
Marital Status	Married	101(26.9%)	182(48.4%)	0.206	
	Single	26(35.3%)	67(17.8%)		
No of Children	1	63(16.8%)	96(25.5%)		
	2	39(10.4%)	113(30.1%)		
	3	22(5.9%)	36(9.6%)		
	4	3(0.8%)	4(1.1%)		
Religion	Christian	60(16.0%)	122(32.4%)	0.876	
	Muslim	34(9.0%)	69(18.4%)		
	Traditional	19(5.1%)	37(9.8%)		
	Others	14(3.7%)	21(5.6%)		
Level of education	Primary	12(3.2%)	30(8.0%)		
	Secondary	32(8.5%)	67(17.8%)		
	College/University	83(22.1%)	152(40.5%)		
No Income	<5000	23(6.1%)	38(10.1%)	0.879	
	5001- 15000	42(11.2%)	81(21.5%)		
	15001- 25000	21(5.6%)	37(9.8%)		
	25001-40000	4(1.1%)	10(2.7%)		
	40001 Plus	5(1.3%)	16(4.3%)		
	No Income	32(8.5%)	67(17.8%)		

4.6 Binary Logistic Regression to Determine the Predictors of Caregiver Burden

Multiple Binominal/Binary logistic regression was performed to ascertain the effects of marital status, education, employment, child age, child's gender and other factors on the likelihood that participants will develop disruptive behavior disorders (regression analysis can be done for all independent variables both significant and insignificant. The sample size was adequate and therefore the effect of leaving in insignificant variables was negligible. It is also important to show that insignificant variables are indeed insignificant). The Wald chi square test was used to determine statistical significance for each of the

independent variables. Table 4.3 below indicates that; the marital status of the parents (p = 0.019), child's gender (p = 0.041) added significantly to the model/prediction.

Table 3: Binary logistic regression to determine the predictors of Caregiver Burden
Variables in the Equation

Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I. for EXP(B)	
							Lower	Upper
Marital Status	-.089	.644	.891	1	.019	.915	.259	3.234
Religion	-.086	.111	.597	1	.440	.917	.737	1.141
No of Children	.073	.147	.245	1	.621	1.076	.806	1.436
Salary	.092	.075	1.512	1	.219	1.096	.947	1.270
Employment	-.076	.107	.506	1	.477	.927	.752	1.143
Education	-.128	.134	.911	1	.340	.880	.676	1.145
Marital	.142	.211	.452	1	.501	1.153	.762	1.743
Child gender	.188	.229	.411	1	.041	1.207	.771	1.891
Age child	.098	.063	2.383	1	.123	1.103	.974	1.249
Age	.024	.015	2.389	1	.122	1.024	.994	1.055
Gender	-.041	.225	.033	1	856.	.960	.618	1.492
Constant	-.930	1.252	.551	1	.458	.395		
a. Variable(s) entered on step 1: Marital, Religion, No of Children, Salary, Employment, Education, Child gender, Age child, Age, Gender.								

CHAPTER 5: DISCUSSION, CONCLUSION & RECOMMENDATIONS

5.1   Discussion

5.1.1   Socio Demographic Profile of participants

The study sought to determine the socio-demographics of the 6 to 12 year old children and the study's findings of the socio-demographic characteristics of the parents is a reflection of the children's'. The study found that there were more male and female children and their mean age was 8.68 years (SD. ± 1.833), the mode was 9 and the median was 9yrs. The mean and median were similar indicating that children's ages was distributed evenly across the study population. A Ugandan study also reported near similar results with the mean age of students being 10.27yrs (Kivumbi, et al., 2019). They also reported that most of their respondents (52%) were female unlike this Kenyan study that reported that most of the children were male at 57.7%. The children in this Kenyan mostly came from two parent household as 74.5% of the parents were married or living with their spouses. The remaining 25.5% came from single parents' household by virtue of their parents never been married, divorced and widowed. There has been no clear association between developments of disruptive behavior disorders, however, there are studies that have established that higher parental stress can lead development to DBDs (Matthys & Lochman, 2010). The assumption would therefore be that children from single parents' home were more likely to develop disruptive behaviour disorders.

29.3% of the parents indicated that they were unemployed as they were either students or unpaid volunteers at some organization. Clearly indicating that a considerable number of them were from a low-socio economic background. It has been established that generally contextual factors like poverty and living in high-crime neighborhoods increase conduct

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problems and therefore a higher rate in prevalence of disruptive behaviour disorders amongst these children would be expected (Kivumbi, et al., 2019).

5.1.2 Prevalence of oppositional defiant disorder, conduct disorder and Non-specified disruptive behaviour disorders among school going children aged 6 to 12 years

The study revealed that overall, the prevalence of the disruptive behavior disorders among 6 to 12yrs was 39.6%. Based on Parental reports, the study revealed that 16.2% of the children had oppositional defiance disorder, 14.4% (54), had conduct disorder and 9.0% were found to exhibit Attention Deficit Hyperactive disorder symptoms and other non-specified disruptive behaviors. Other studies have reported lower prevalence rates; Sujit, Vinod, Manu, & Pushpal(2006), reported that only 4.6 % of the children that were assessed in a school had conduct disorder. The study specifically assessed for conduct disorder however the researchers also found that amongst this group of children that had conduct disorder, 36% had attention deficit hyperactivity disorder (Sujit, et al.,2006). The study was done in India.

In a National Comorbidity Study done in the United States, community sample of children between the age of 4 and 17yrs, the point prevalence estimates of oppositional defiant disorder in ranged from 2 to 16% (Merikangas, et al., 2010). In a previous survey, parents' reports' on prior diagnoses for children between the age of 3 to adolescents up to age17yrs, revealed that 4.6% had oppositional defiant disorder or conduct disorder. An estimated 3.5 percent had a current condition (Perou, et al., 2013). In a study dubbed SMART Africa-Uganda (2016–2021), that was set across 30 public primary schools located in the greater Masaka region in Uganda, and where data was obtained from caregivers of 2434 children,

6% scored positive on oppositional defiant disorder and 2% scored positive on conduct disorder subscales of the disruptive behaviour disorder scale; 9.61% and 2.67% were reported to have elevated symptoms of oppositional defiant disorder and attention deficit hyperactivity disorder on the Iowa Connors caregiver report scale respectively (Kivumbi, et al., 2019).

In Africa, most studies that have been done are on attention deficit hyperactivity disorder symptoms. For instance, in South Africa, Bakare reported that the prevalence of behavioral problems among school going children, particularly attention deficit hyperactivity disorder, varies between 5.4 to 8.7% (Bakare, 2012) while Chinawa et al (2014), reported a prevalence rate of 3% for attention deficit hyperactivity disorder among school going children seeking treatment at health facilities in Nigeria. Our prevalence rates in this current study for disruptive behaviour disorders as measured by disruptive behaviour disorders scale are much higher than this rate. Not many studies have looked at disruptive behaviour disorders like our study.

5.1.3 Relationship Between Sociodemographic Characteristics and Disruptive Behavior Disorder

There was a significant association between the children's gender and developing disruptive behavior disorder. Where it was determined that more male children were suffering from the disorders. The children's gender was significantly associated with disruptive behavior disorder at a p= 0.048 while the effect that children's gender had on disruptive behavior disorder was moderate at a Cramer's V of 0.202. in the study that was done in India by Sujit et al. (2006), similar findings were established. Conduct disorder was found in 4.58%; the ratio of boys to girls being 4.5:1. Merikangas, et al.(2010) also

reported similar findings from the National Comorbidity US survey. They found that boys were twice as likely as girls to have these conditions. Though in their study they reported age was associated with an increased reporting of oppositional defiant disorder and conduct disorder, this current study didn't find any significant association between age and these disorders. The same was noted for most of the socio-demographic factors. It is important to note that research has shown that one disorder basically implies that one is going to develop the other.

However, Keenan, Wroblewski, Hipwell, Loeber, & Stouthamer-Loeber (2010), found that the diagnositic validity of disruptive behaviour disorders was questionable among girls. They found that only half of the girls that had been diagnosed with conduct disorder met the criteria for oppositioanal defiant disorder. The researchers included 2451 girls in their study and followed them from age 7 to 15 yrs. This meant that in girls that oppositional defiant disorder did not confer increased risk for the development of conduct disorder; rather, it was associated with increased risk of continued oppositional defiant disorder and other mood disorders. Therefore, the question on sex or gender influence in the diagnosis of oppositional defiant disorder is still alive.

The Multiple Binominal/Binary logistic regression showed that risk factors for children developing disruptive behavior disorders were the marital status of the parents ($p = 0.019$), child's gender ($p = 0.041$). As gender has been expounded on, the discussion here focuses on the marital status of the parents. Other studies have well-documented the significant linkage between family context and child psychological development particularly in families with children having potential affective and behavioral problems (Smeekens et al.,

2007; Lavigne et al., 2014). Lavigne et al. (2014) found that higher scores on family risk factors (family conflict, parent hostility in parenting, child emotion temperament) were positively associated with child oppositional defiant disorder symptoms in a cross-sectional study. A wealth of literature has identified numerous family factors that placed children at increased risk of developing oppositional defiant disorder, including poor family function, low marital quality, parental maladaptive behavior, paternal substance abuse, and low quality parent-child relationship (Marmorstein et al., 2009; Matthys and Lochman, 2010). This current study missed out on the respondents' relationship with the parent, whether there a mother to child positive attachment which is key. The researcher should have inquired about the status of the marriage and if they were having different views on something.

Life stressors such as poverty, unemployment, low socio-economic status, and affiliation to an ethnic minority (McCabe et al., 2001) are known to have an adverse effect on parenting and are therefore also related to the development of disruptive behaviour disorders. Besides health factors, psychosocial and parental factors have to be considered. A child's risk of developing conduct disorder is increased by parent psychopathology: Maternal depression, paternal alcoholism and/or criminality and antisocial behavior in either parent (Pfiffner et al., 2005; Kopp and Beauchaine, 2007) have been specifically linked to disruptive behaviour disorders. Inconsistent parenting, higher levels of punishment with a concurrent reduction in reasoning and rewards, parents' negative perception of their child's adjustment, and reduced parental monitoring are additional determinants of disruptive behaviour disorders and, most notably, seem to predict high probability of transition from attention deficit hyperactivity disorder to opposition defiant

disorder and conduct disorder (Patterson et al., 2000). There is some evidence that variables presumed environmental in the first instance (e.g., parenting) may also reflect underlying genetic vulnerability within families.

5.2 Conclusion

The results indicate that there is a high presence of behavioral challenges and attention deficit hyperactivity disorder symptoms among school going children, aged 6 to 12 years, in Nairobi. Given the negative outcomes associated with behavioral challenges as children transition to adolescence and adulthood, detecting these emerging behavioral challenges early is critical in developing appropriate interventions. The study also found that the child's gender and marital status were risk factors for developing disruptive behavior disorders.

5.3 Recommendations

Based on the study findings, the study recommends that,

School settings could be considered as one of the contextually-relevant, culturally-appropriate, and non-stigmatizing venues to implement screening procedures and to detect emerging behavioral challenges and to make necessary referrals

Teachers are educated on identifying children with symptoms of conduct and oppositional defiance disorder. This could help in quick management which basically requires a multisystemic approach

Parents should also be enlightened on some of the signs that shows that their children are having behavioral problems that are slightly abnormal. They should also be made aware of expected behavior for their children as per their development stages and encouraged to

seek help from a mental health practitioner if they find peculiar behavior and unfathomable aggression from their children. Early management of these behavioral disorders can prevent development of other mental disorders among these children

5.4 Suggestions for Further Studies

The study adopted the disruptive behavior questionnaire that is based on the diagnostic statistical manual volume four (DSM IV) diagnosis criteria where attention deficit hyperactivity disorder was also classified as a disruptive behavior disorder. This hindered primary focus on Oppositional defiant disorder and conduct disorder and instead also expanded the criteria to look at symptoms of attention deficit hyperactivity disorder. Therefore, another study needs to be done that can clearly look at disruptive behavior disorders. These study also didn't consider key psychosocial factors like maltreatment or parental factors (style of parenting) which are important in determining a child's behavior. These should be included in the next study.

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APPENDICES

Appendix 1: Informed Consent Explanation

TITLE OF STUDY: Disruptive Behavior Disorders among School-Going Children Aged 6-12 Years in Nairobi County

PRINCIPAL INVESTIGATOR AND INSTITUTIONAL AFFILIATION: Grace K. Okoba,
Msc. Clinical Psychology student from the University of Nairobi.
INTRODUCTION:
I would like to tell you about a study being conducted by the above listed researcher. The purpose of this consent form is to give you the information you will need to help you decide whether or not to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide to be in the study or not. This process is called "informed consent". Once you understand and agree to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research:

   i.   Your decision to participate is entirely voluntary
  ii.   You may withdraw from the study at any time without necessarily giving a reason for your withdrawal
 iii.   Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your records.

May I continue? YES/ NO

This study has approval by The Kenyatta National Hospital–University of Nairobi Ethics and Research Committee protocol No. _____

WHAT IS THIS STUDY ABOUT?

The researcher listed above is interviewing parents with children between the age of 6 and 12yrs (class 1 to 4). The purpose of the interview is to assess the prevalence disruptive behavior disorders among school-going children aged 6-12 years in Nairobi county.

Participants in this research study will be asked questions about their children's behaviours from childhood to date with regards to how they interact with other, how they handle anger, how they treat others in their social environment, what they do when they engage in play etc.

There will be approximately 385 participants in this study randomly chosen. We are asking for your consent to consider participating in this study.

WHAT WILL HAPPEN IF YOU DECIDE TO BE IN THIS RESEARCH STUDY?

If you agree to participate in this study, the following things will happen:

You will be interviewed by a trained interviewer in a private area in the school where you feel comfortable answering questions. The interview will last approximately 30 minutes.

After the interview is done, psycho education, counseling/ psychotherapy and referral for psychiatric review at Kenyatta National Hospital child clinic may follow if deemed necessary.

We will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. The reasons why we may need to contact you include: clarification of information given.

ARE THERE ANY RISKS, HARMS, DISCOMFORT ASSOCIATED WITH THIS STUDY?

Medical research has the potential to introduce psychological, social, emotional and physical risks. Effort should always be put in place to minimize the risks. One potential

risk of being in the study is loss of privacy. We will keep everything you tell us as confidential as possible. We will use a code number to identify you in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting your confidentiality can be absolutely secure, so it is still possible that someone could find out you were in this study and could find out information about you.

Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any question asked during the interview.

Discussing your child's behaviour maybe stressful leading to emotional distress. Referrals for psychiatric review will be done for severe cases while counselling will be done on site for less severe cases. Follow up psychotherapy and counselling services will be done.

In case of any injury, illness or complications related to this study, contact the researcher right away at the number provided at the end of this document.

ARE THERE ANY BENEFITS BEING IN THIS STUDY?

First, finding out whether your child has DBD will be of great benefit to you as a parent because then it will help with appropriate and timely management. The information you will provide will be contribution to science and knowledge in understanding the DBDs and even its comorbidities in children.

WILL BEING IN THIS STUDY COST YOU ANYTHING?

There will be no financial cost to you during the data collection

WILL YOU GET REFUND FOR ANY MONEY SPENT AS PART OF THIS STUDY?

Transport cost to and from the school will be refunded by the researcher to attune of 300 shillings per parent.

WHAT IF YOU HAVE QUESTIONS IN FUTURE?

If you have further questions or concerns about participating in this study, please call or send a text message to the researcher at the number provided at the bottom of this page. The researcher will pay you back for your incurred costs related to communication.

For more information about your rights as a research participant you may contact the:

KENYATTA NATIONAL HOSPITAL-UNIVERSITY OF NAIROBI ETHICS AND RESEARCH COMMITTEE

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WHAT ARE YOUR OTHER CHOICES?

Your decision to participate in research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

Appendix 2: Statement of Consent

Participant's statement

I have read this consent form or had the information read to me. I have had the chance to discuss this research study with a study counselor. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time. I freely agree to participate in this research study.

I understand that all efforts will be made to keep information regarding my personal identity confidential. By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study: **Yes**

      No I agree to have the questionnaire preserved for later study: Yes   No   I agree to provide contact information for follow up: Yes   No **Participant   printed name:** _____

Participant signature/ Thumb stamp _____ Date_____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has willingly and freely given his/ her consent.

Researcher's Name:_____Date _____

Signature_____ **Role in the study:** _____

Appendix 3: Questionnaire: Socio-Demographic Questionnaire

Q No	Question	Response	Code
1	In which estate do you live?		
2	Language of the Interview?		
3	Your relationship with [target child]:	Mother Father Other relative (Specify) Other (Specify)	1 2 3 4
4	Your gender	Male Female	1 2
5	What is your date of birth?	Day_____Month_____Year _____ Your Age?	1 2
6	What is your marital status?	01=Married; 02=Cohabiting 03=Divorced or separated; 04=Single; 05=Widowed; 06 =Other (Specify	1 2 3 4 5 6
7	What is the highest level of education you have completed?	01=No formal schooling; 02=Less than primary school; 03=Primary school completed; 04=Secondary/High school completed; 05=College/University completed; 06=Post graduate degree	1 2 3 4 5 6
8	What is the highest level of education your partner/spouse has completed?	01=No formal schooling; 02=Less than primary school; 03=Primary school completed; 04=Secondary/High school completed; 05=College/University completed; 06=Post graduate degree	1 2 3 4 5 6
9	Which of the following best describes your main work status over the last 12 months?	01=Government employee; 02=Non-government employee; 03=Self-employed; 04=Non-paid; 05=Student; 06=Homemaker; 07=Retired;	1 2 3 4 5 6 7
		08=Unemployed (able to work); 09=Unemployed (unable to work)	8

			9
10	Which of the following best describes your partner's (spouse) work status over the last 12 months?	01=Government employee; 02=Non-government employee; 03=Self-employed; 04=Non-paid; 05=Student; 06=Homemaker; 07=Retired; 08=Unemployed (able to work); 09=Unemployed (unable to work)	1 2 3 4 5 6 7 8 9
11	How many habitable rooms does your household occupy in its main dwelling? (do not count bathrooms, toilets, storerooms, or garage)	A One B Two C Three D Four or more	1 2 3 4
12	The floor of the main building is made of what material?	A wood, earth or other B Cement or tiles	1 2
13	What is the main source of lighting in the household?	A Firewood or torch B Paraffin, candles, biogas, or other. C Electricity, Solar or Gas	1 2 3
14	Age in years at first marriage		
15	Total number of household members:		
16	Total number of children under 18 years old in your household:		
18	Religion	1 Christian 2 Muslim 3 Traditional 4Other(specify)	1 2 3 4
19	Study Child date of birth:	_____/_____/_____(day/month/Year) Or Estimated Age _____ months	1 2
20	Child's gender	01= Male 02=Female	1 2

Appendix 4: Disruptive Behavior Disorder Screening Tool

Child's Name ………………………. ….. Form Completed

by……………………………. Class………DOB………Sex…………Date

Completed:……………………………

Check the column that best describes your /this child. Please write DK next to any items

for which you don't know the answer.

	Not at All	Just a Little	Pretty Much	Very Much
1. often interrupts or intrudes on others (e.g., butts into conversations or games)				
2. has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)				
3. often argues with adults				
4. often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others)				
5. often initiates physical fights with other members of his or her household				
6. has been physically cruel to people				
7. often talks excessively				
8. has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery)				
9. is often easily distracted by extraneous stimuli				
10. often engages in physically dangerous activities without considering possible consequences (not for the				

purpose of thrill-seeking), e.g., runs into				
11. often truant from school, beginning before age 13 years				
12. often fidgets with hands or feet or squirms in seat				
13. is often spiteful or vindictive				
14. often swears or uses obscene language				
15. often blames others for his or her mistakes or misbehavior				
16. has deliberately destroyed others' property (other than by fire setting)				
17. often actively defies or refuses to comply with adults' requests or rules				
18. often does not seem to listen when spoken to directly				
19. often blurts out answers before questions have been completed				
20. often initiates physical fights with others who do not live in his or her household (e.g., peers at school or in the neighborhood)				
21. often shifts from one uncompleted activity to another				
22. often has difficulty playing or engaging in leisure activities quietly				
23. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities				
24. is often angry and resentful				
25. often leaves seat in classroom or in other situations in which remaining seated is expected				

26. is often touchy or easily annoyed by others				
27. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)				
28. often loses temper				
29. often has difficulty sustaining attention in tasks or play activities				
30. often has difficulty awaiting turn				
31. has forced someone into sexual activity				
32. often bullies, threatens, or intimidates others				
33. is often "on the go" or often acts as if "driven by a motor"				
34. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)				
35. often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)				
36. has been physically cruel to animals				
37. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)				
38. often stays out at night despite parental prohibitions, beginning before age				
39. often deliberately annoys people				
40. has stolen while confronting a victim (e.g., mugging, purse snatching,				
41. has deliberately engaged in fire setting with the intention of causing serious damage				

42. often has difficulty organizing tasks and activities				
43. has broken into someone else's house, building, or car				
44. is often forgetful in daily activities				
45. has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun)				

End of interview. Thank you for your participation.