



Risk Factors Associated with Oppositional Defiant Disorder among Children in Selected Primary Schools in Nairobi County, Kenya

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ARTICLE INFO

Article history:

Received: 26 August 2018;

Received in revised form:
22 September 2018;

Accepted: 1 October 2018;

Keywords

Oppositional defiant Disorder,
Risk factors,
Children,
Child,
Adolescent Disruptive,
Behavior Inventory.

ABSTRACT

The main purpose for this study was to evaluate the efficacy of cognitive behavior therapy (CBT) among children with oppositional defiant disorder (ODD) in selected primary Schools in Nairobi County, Kenya. The rise in defiance cases among children in schools in Kenya, the social, educational and economic impact it has on the children and their families have led for the need for proper diagnosis and effective intervention. The objective of this study was to determine the risk factors associated with oppositional defiant disorder among children. Quasi experimental research design was used in the study with a sample of 180 respondents .The study involved children aged between 9 to 14 years. Purposive sampling was used in selecting the two schools. 315 respondents completed the demographic questionnaires; the respondent's parents also completed the socio-demographic questionnaires. Teachers and parents completed the CADBI at baseline assessment to identify those with symptoms of ODD. Systematic sampling method was applied on 249 participants who met the criteria for ODD because the number exceeded the required sample size. Risk factors associated with ODD were; religion, educational level of the respondents, conflicted relationship with parents, punishment in school, socio economic status and suspension from school, respondents whose parents were casual laborers, the level of education of the respondent's parents. Significance was reported at $p < 0.05$. In conclusion, primary schools need to have professional psychologists to provide counseling services to the children presenting with ODD symptoms and devise intervention that will help in the management of ODD .This will help the children function well both socially and academically. This will also stop the progression of ODD to other mental disorders when they are adults for example; Depression, Anxiety, Antisocial Disorder which causes problems with adjustment in the community.

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Introduction

According to the American Psychiatric Association (2013), oppositional defiant disorder is characterized under the disruptive, impulse-control and conduct disorders. Symptoms of ODD include; frequent temper tantrums, excessive arguing with adults, often questioning rules, active defiance and refusal to comply with adult requests and rules, deliberate attempts to annoy or upset people, blaming others for his or her mistakes or misbehavior, often being touchy or easily annoyed by others, frequent anger and resentment, mean and hateful talking when upset, spiteful attitude, and revenge seeking (The American Academy of Child Adolescent Psychiatry, 2013).

Furthermore, APA, (2013) reported that the symptoms of ODD may be confined to only one setting and this is most frequently the home. Individual who show enough symptoms to meet the diagnostic threshold, even if it is only at home, may be significantly impaired in their social functioning. However, in more cases, the symptoms of the disorder are present in multiple settings. Given that the pervasiveness of symptoms is an indicator of the severity of the disorder, it is critical that the individual's behavior be assessed across multiple settings and relationships. Because symptoms of the

disorder are typically more evident in interactions with adults or peers whom the individual knows well, they may not be apparent during a clinical examination.

Children's behavioral disorders are common and disabling which create many problems for families, teachers, and children themselves and are associated with many social problems (Najafi, Fouladchang, Alizadeh, & Mohammadifar, 2009). According to Jalali, Shaeeri, Tahmasian, and Pourahmad (2008), ODD is a gradual and chronic disorder that almost always interferes with interpersonal relationships and the academic performance of children. Safari, Faramarzi and Abedi (2012) claimed that children with ODD symptoms often do not have cognitive, social, and emotional skills to carry out the demands of adults.

Similarly, Safari et al., (2012) further indicated that these children are weak in interpersonal relationships and have attention problems and defects in executive functions. They often have no friend and human relations are not satisfying for them. Davison (2005) was of the view that despite adequate intelligence, these children progress slowly and may fail at school due to lack of participation and resistance to external demands, and insistence on solving problems with the help of others.

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According to Klein and Forehand, (2000) risk factors can be defined as those factors associated with a higher likelihood of negative outcomes and have mainly been studied in relationship to the development of problem behavior. In order to accurately identify support strategies for parents whose children exhibit behavioral problems, it is essential to have an understanding of the factors that place children at risk of, or contribute to the development of such behavior in the first place. Research suggested that, in isolation, risk factors may make relatively little contribution to the development of behavioral problems, whereas such factors in combination may be powerful determinants of negative outcomes (Klein & Forehand, 2000).

Problems result from interactions between characteristics of the child and situations within the family, peer group, school and community. Therefore, it can be expected that families with multiple risk factors experience more problems and thus also a greater need for support. Cummins and McMaster's study (2006) found that children who screened positive for mental health difficulties were more socially disadvantaged, had more behavioral difficulties and adaptive behavior problems, more physical health problems, more family problems, more life stress and poorer coping skills. Therefore, an understanding of the key risk factors associated with the onset and development of child behavioral problems, and in turn, an identification of high risk groups of children is important in the effective identification and design of supports for parents and children.

A study by Fossum (2008) deduced that disruptive behavioral disorders such as ODD are frequently seen by the mental health community service in the US and are the regular reasons for referring children to mental health service in Norway. Children with ODD are at risk of developing a variety of problems including peer rejection, school failure, substance abuse, and criminality for which the prognosis is poor.

In a longitudinal perspective, a substantial number of children displaying early symptoms of ODD go on to adolescence and young adulthood experiencing significant mental health problems, physical health problems, academic problems, economic problems, and engaging in serious violence (Burke, Hipwell, & Loeber, 2010).

There seems to be no one cause of ODD as per McKinney and Renk's (2007) argument that many factors, such as familial, biological, environmental, and individual have been associated with behavioral problems in children. In line with this view, Fossum (2008) expressed that child factors such as temperament; high rates of disruptive, impulsive, inattentive and aggressive behaviors; and family factors such as parenting, parental psychopathology, marital adjustment, and maternal age do indeed contribute to ODD.

An extensive study by Patterson (1986) revealed that parenting is an important factor in the development of aggressive behaviors. As cited in Fossum (2008), Patterson asserted that parenting practices have indeed been recognized to be among the most powerful predictors of antisocial behavior and that several aspects of child rearing such as poor supervision, lack of parental warmth, and harsh styles of discipline are correlated with disruptive behavior in children.

In agreement, Granero, Louwaars, and Ezpeleta (2015) argued that ODD is conceptualized as the result of the interaction of individual characteristics such as a high negative affectivity, low effortful control, and difficulties in social learning or emotional deregulation; with environmental adversities such as dysfunctional parenting style, parental

psychopathology, socioeconomic problems, or family conflict.

Behavioral problems may present in a variety of ways across a wide range of contexts over time. Social and parental expectations change across developmental stages as children's communication, self-regulation, social skills, and coping skills mature. Most of the time, behavioral problems are short in duration, minor in severity, and co-occur with developmental stages and changes in familial and social expectations.

Thus, risk factors and causal pathways in the development of behavioral problems are viewed within a transactional context involving developing children within an environment. A disorder results from interrelated maladaptive social, emotional, and/or cognitive competencies that hinder adjustment to the environment at a specific stage of development. It is important therefore to recognize both individual and environmental factors in the development of behavioral problems.

According to a study by McKinney and Renk (2007) sex differences between boys and girls often have been noted for behavioral problems, with boys tending to have a higher number and a greater severity of behavioral problems relative to girls. For example, boys tend to exhibit more mother reported physical aggression and fewer prosocial behaviors. Such findings may be due in part to societal or stereotypical expectations regarding appropriate behaviors for boys versus girls. For example, parents may reinforce antisocial behaviors differentially in boys versus girls, suggesting that the initial developmental pathways to behavioral problems may be the same between the sexes but that these pathways then are influenced directly by parental responses.

Furthermore, ODD arises out of a complex mix of risk and protective factors originating in the bio-psychosocial constellation of an individual. According to APA, (2013), these factors include temperamental factors related to problems in emotional regulation such as high levels of emotional reactivity, and poor frustration tolerance. The literature concerning underlying factors for disruptive behaviors identifies dysfunctional parent-child interactions, and child abuse as some of these behaviors. McKinney and Renk (2007) reported that low social economic status has also been identified as a demographic risk factor for behavioral problems.

Other research has also determined that low social-economic status is a risk factor for almost 60% of families of children with behavioral problems in contrast to 23.8% of families of children without behavioral problems (McKinney & Renk, 2007).

Additionally, there is evidence of a close response relationship between child behavior and poverty: the longer a child is in poverty, the more at risk they are of behavioral problems when compared to children from families in short term poverty or affluence (Duncan, BrooksGunn, Klebanov, 2004). The prevalence of significant emotional and behavioral problems were found to be 6% higher for children from lower socioeconomic groups than the average 10% for children at primary school level in a recent study in the South East of Ireland.

Consistently, research on parenting variables demonstrated that parents of children with behavioral problems may be less consistent in their parenting, show more negative expectations, be less caring, and show higher levels of stress than parents of children without such problems. Further, negative parenting styles (e.g., uninvolved,

rejecting, harsh) have been related to behavioral problems in children. For example, children with problematic behaviors have a history of higher rates of negative interaction and of lower rates of harmonious interaction (McKinney & Renk, 2007).

Ongoing parental conflict, particularly where it directly involves children increases the risk of poor outcomes for children. McKeown, Pratsche, Haase, (2003) found the first and most important process to affect child wellbeing, as reported by the child, was that of unresolved problems between the child and its parents, including conflicts relating to behavior for example; homework, school progress, drinking/smoking), family issues for example doing things as a family and communication). Similarly, an Australian study of parent's experiences of their teenager's behavior revealed that issues around family conflict and management of emotions featured strongly and were identified as areas where parents wanted assistance (Ralph & Sanders, 2003).

According to Ralph and Sanders, (2003) conflict with parents has been found to be strongly associated with contact with antisocial peers and substance use. High levels of positive family relations, parental monitoring, rule setting, and positive reinforcement for appropriate behavior are associated with less contact with disruptive peers, less engagement in antisocial behavior and less substance use. A range of parenting skills and attributes are important. A close parent child bond may discourage drug use directly, and choice of non-drug using friends, while low family cohesion may predispose children towards deviant behaviors which parents then lack the influence to control.

Similarly, although negative maternal control predicts children's noncompliance, difficult children also may elicit more inconsistent behavior from their caregivers. Thus, interactions between parents and children with behavioral problems may be characterized generally by more disapproval and negative affect, less positive expressiveness, and more parental control. Such characteristics lead both children and parents to have fewer positive cognitions and expectations about their interactions.

Parental separation, divorce, and marital discord may be other environmental correlates in the development of behavioral problems (Slutske, Cronk, & Nabors-Oberg, 2003). A recent meta-analysis by Amato (2001) suggested that parental divorce and behavioral problems in children share only a modest relationship. Some research suggested that this association is due merely to preexisting maternal characteristics, whereas other studies controlling for genetic factors found a direct association (Slutske et al., 2003). Thus, parental divorce may play an active role in the development of behavioral problems. Given the mixed results, however, no

conclusive statements about the relationship between divorce and behavioral problems can be made. Research, however, has shown a stronger relationship between behavioral problems and marital distress.

Methodology

Quasi-experimental research design was used in this study among children in the selected primary schools in Nairobi County. The SDQ was completed by 315 children and their parents, the CADBI was filled by the parents and teachers. 249 respondents met the criteria for ODD out of which 180 were systematically sampled. Data from the study was collected from children ages 9–14 years after Assent/consent was obtained. In this study, Fisher's formula was used as cited by Fisher, Laing, Stoeckel, and Townsend (1991) to calculate the minimum required sample size, using mean and standard deviation estimates. Allowing for 10% attrition rate, the total sample size was adjusted upwards to 90. During the study period a total of 4 children dropped out of the study bringing the number of respondents to 176. The respondent's socio-demographic questionnaire included the following variables: age, gender, class, religion, socio-economic status, academic performance, living with mother/father, step-parent, and grandparents) among other issues. Additionally, the parent's socio-demographic questionnaire included Age, gender, marital status, religion, socio-economic status etc. This study was the first one to the CADBI too Africa and especially in Kenya. CADBI tool both parents and teacher versions were completed to help in the assessment of children with ODD. CADBI has proved to have good reliability and validity for describing ODD symptoms, Cronbach alpha of the CADBI tool showed reliability at $\alpha = .918$ to $.890$ for both teachers and parents. Statistical analysis was conducted using IBM SPSS version 23. Microsoft Excel was used in processing statistical output as well as construction of data tables and graphs. Chi-Square was done to test for association between risk factors and ODD. The risk factors to ODD in this study were tested at a significant level of $p < 0.05$.

Results

The socio-demographic distribution characteristics of the respondents are shown in table 1. The sample was 180 respondents. The respondents were mainly distributed between classes 4 to class 7. Most of the respondents were in standard 7 (40.7%) with their numbers decreasing from standard 6 (27.7%), standard 5 (27.7%) and standard 4 (3.9%) respectively (Table 1).

On the basis of gender, distribution was 77 (43.3%) and 99 (56.7%) for males and females respectively (Table 2).

Table 1. Class distribution of the respondents.

Class	4		5		6		7		Total
Timeline	N	%	N	%	N	%	N	%	
Baseline									
Control	7	7.8%	16	15.5%	18	20%	51	56.7%	90
Experimental	0	0.0%	32	37.9%	32	35.5%	24	26.7%	90
Total	7	3.9%	48	24.4%	50	27.8%	75	41.6%	180
Midline									
Control	7	7.8%	16	15.5%	18	20%	51	56.7%	90
Experimental	0	0.0%	32	37.9%	32	35.5%	24	26.7%	90
Total	7	3.9%	48	24.4%	50	27.8%	75	41.6%	180
Endline									
Control	7	7.8%	14	15.6%	18	20.0%	50	56.7%	89
Experimental	0	0.0%	33	37.9%	31	35.5%	23	26.7%	87
Total	7	3.9%	47	26.7%	49	25.6%	73	41.6%	176

Table 2. Distribution by Gender.

Timeline	Males		Females		Total
	N	%	n	%	
Baseline					
Control	35	38.9%	55	61.1%	90
Experimental	44	48.9%	46	51.1%	90
Total	79	43.9%	101	24.4%	180
Midline					
Control	35	38.9%	55	61.1%	90
Experimental	44	48.9%	46	51.1%	90
Total	79	43.9%	101	24.4%	180
Endline					
Control	34	38.2%	55	61.8%	89
Experimental	43	49.4%	44	50.8%	87
Total	77	43.8%	99	56.7%	176

The respondents were aged between 9 and 14 years. The respondents were categorized as those below 10 years, and those between 10-14 years of age. Most of the respondents were 12 years (32.2%), 13 (23.9%) and 11 (22.8%). The other ages were 10 (11.1%), 14(7.2%) and 9 (2.8%) years respectively in a decreasing order. The numbers were similar in midline but declined at endline following the withdrawal of four (4) respondents from the study during the endline of the study.

Table 3. Distribution by age of the respondents.

Age	Baseline	Midline	Endline
9	5 (2.8%)	5 (2.8%)	4 (2.3%)
10	20 (11.1%)	20 (11.1%)	18 (10.2%)
11	41 (22.8%)	41 (22.8%)	40 (22.8%)
12	58 (32.2%)	58 (32.2%)	58 (33.0%)
13	43 (23.9%)	43 (23.9%)	42 (23.9%)
14	13 (7.2%)	13 (7.2%)	14 (8.0%)

Socio-demographic characteristics of respondents at baseline

Table 4 showed that most of the respondents speak Kiswahili as their main language of communication (151, 83.9%), followed by English (29, 16.1%). Moreover, many of the respondents are Kenyan (176, 97.8%) with few students from Uganda and Tanzania. The respondent's religious backgrounds varied with the most of them being Christian (92.2%) and Muslims (7.8%). Protestants were the highest in their distributions (80, 44.4%), followed by Roman Catholics (45, 25%), Seventh Day Adventists (27, 15%), and finally Anglican (14, 7.8%). It is also a common practice among them that they attend religious groupings once in a week (165, 91.7%). A few respondents attend religious services one a month (3.3%) and once a year (2.2%) while only 2.8% of the respondents never attend religious groupings completely. Moreover, most of the respondents have a guidance and counseling teacher (150, 83.3%).

In terms of the performance of the respondents, it ranked as excellent (53, (29.4%), above average (47, 26.1%), average (70, 38.9%), and below average (10, 5.6%). The place of residence for many of the respondents was in an urban setting (157, 87.2%) while 23 (12.8%) live in their rural setting. More so, many of them are living at their homes with their parents (177, 98.9%) while only 2 (1.1%) are residing at the children homes. Significant variations between the control and experimental groups were observed in language ($p=0.026$), religion ($p=0.002$), Christian programs they attended in school ($p=0.001$), and school performance ($p=0.000$) respectively. All other socio - demographic factors remained the same for both the control and experimental groups ($p > 0.05$).

Table 4. Social demographic details of the respondents

Variables	Total (n=180)		Control (n = 90)		Experimental (n = 90)		X ²	Phi	df	p value
	N	%	N	%	N	%				
Languages										
Kiswahili	151	83.9%	81	90%	70	77.8%	4.974	0.166	1	0.026***
English	29	16.1%	9	10%	20	22.2%				
Nationality										
Kenyan	176	97.8%	89	98.9%	87	96.7%	4.023	0.149	2	0.134
Tanzania	3	1.7%	0.0	0.0%	3	3.3%				
Uganda	1	0.6%	1	1.1%	0	0.0%				
Religions										
Roman Catholic	46	25.6%	27	30%	19	21.1%	18.643	0.322	5	0.002***
Protestant	79	43.9%	48	53.3%	31	34.4%				
SDA	26	14.4%	6	6.7%	20	22.2%				
Muslim	14	7.8%	6	6.7%	8	8.9%				
Anglican	14	7.2%	3	3.3	10	11.1				
None	2	2.2%	0.0	1.1	2	2.2%				
Number of times attending religious groups										
Once a week	165	91.7%	88	97.8%	77	85.6	9.4	0.229	3	0.024***
Once a month	6	3.3%	1	1.1%	5	5.6				
Once a year	4	(2.2%)	1	1.1%	3	3.3%				
Not at all	5	(2.8%)	0.00	0.0%	5	0.00				
Guidance and counseling teacher										
No	30	(16.7%)	13	14.4%	17	18.9%	0.640	-0.060	1	0.424
Yes	150	(83.3%)	77	85.6%	73	81.1				
School performance										
Below average	10	(5.6%)	7	7.8%	3	3.3%	43.058	0.489	3	0.000***
Average	69	(38.3%)	54	60%	15	16.7%				
above average	50	(27.8%)	17	18.9%	33	36.7%				
Excellent	51	(27.3%)	12	13.3%	39	43.3%				
Place of permanent residence										
Urban	157	(87.2%)	75	83.3%	82	91.1%	2.443	-0.016	1	0.090
Rural	23	(12.8%)	15	16.7%	8	8.9%				
Current place of residence										
Home	177	(98.9%)	90	100%	87	97.8%	2.045	0.107	1	0.153
Children's home	2	(1.1%)	0	0.0%	2	2.2%				

(***) represents significant variations following chi square analysis at $p < 0.05$

Table 5. Respondent's socio-demographic characteristics.

Variables	Total (n = 180)		Control (n = 90)		Experimental n = 90		X ²	Phi	df	p value
	N	%	N	%	N	%				
Friends at school										
1-10	137	76.1%	65	72.2%	72	80.0%	17.267	0.310	5	0.004***
11-20	22	12.2%	15	16.7%	7	7.8%				
21-30	4	2.2%	2	2.2%	2	2.2%				
31-40	4	2.2%	3	3.3%	1	1.1%				
41-50	5	2.8%	5	5.7%	0	0.0%				
Many	8	4.4%	0	0.0%	8	8.9%				
Friends at home										
None	4	2.2%	4	4.4%	0	0.0%				
0-10	149	82.8%	73	81.1%	76	84.4%	9.867	0.234	5	0.079
11-20	19	10.6%	11	12.2%	8	8.9%				
21-30	3	1.7%	2	2.2%	1	1.1%				
31-40	1	0.6%	0	0.0%	1	1.1%				
Many	4	2.2%	0	0.0%	4	4.4%				
Parents use drugs										
No	174	96.7%	90	100%	84	93.3%	6.207	0.186	1	0.013***
Yes	6	3.3%	0	0.0%	6	6.7%				
Drugs used										
None	173	97.2%	90	100%	85	94.4%	5.143	0.169	5	0.399
Alcohol	2	(1.1%)	0	0.0%	2	2.2%				
Khat	1	(0.6%)	0	0.0%	1	1.1%				
Tobacco	2	(1.1%)	1	1.1%	1	1.1%				
Weed	1	(0.6%)	0	0.0%	1	1.1%				
Times missed school										
Never	127	70.6%	62	68.9%	65	72.2%	3.703	0.143	6	0.717
1	31	17.2%	16	17.8%	15	16.7%				
2	10	5.6%	6	6.7%	4	4.4%				
3	5	2.8%	3	3.3%	2	2.2%				
4	2	1.1%	0	0.0%	2	2.2%				
5	4	2.2%	2	2.2%	2	2.2%				
7	1	0.6%	1	1.1%	0	0.0%				
Suspended from school										
No	151	83.9%	63	70%	88	97.8%	29.282	0.403	2	0.000**
Yes	29	16.1%	27	30%	2	2.2%				
How many times have been suspended										
No answer	155	86.1%	66	73.3%	89	98.9%	24.777	0.371	8	0.002**
Never	1	0.6%	1	1.1%	0	0.0%				
1	11	6.1%	10	11.1%	1	1.1%				
2	3	1.7%	3	3.3%	0	0.0%				
3	5	2.8%	0	0.0%	5	5.6%				
4	2	1.1%	2	2.2%	0	0.0%				
5	1	0.6%	1	1.1%	0	0.0%				
6	1	0.6%	0	0.0%	1	1.1%				
1 week	1	0.6%	1	1.1%	0	0.0%				
Reasons for suspension from school										
No answer	158	87.8%	69	76.7%	89	98.9%	22.000	1.000	5	0.001***
School fees	14	7.8%	14	15.4%	0	0.0%				
Broken window	1	0.6%	1	1.1%	0	0.0%				
Lateness	2	1.1%	1	1.1%	1	1.1%				
Fighting	1	0.6%	1	1.1%	0	0.0%				
Lost a book	2	1.1%	1	1.1%	1	1.1%				
Needed parents to come	2	1.1%	2	2.2%	0	0.0%				
Punishment at home										
Beating	149	82.8%	75	83.3%	74	82.2%	5.825	0.180	4	0.213
Sit and talk	16	8.9%	10	11.1%	6	6.7%				
Deny food	1	0.6%	1	1.1%	0	0.0%				
Doing work	11	6.1%	4	4.4%	7	7.8%				
None	3	1.7%	0	0.0%	3	3.3%				
Punishment at school										
Beating	149	82.8%	80	88.9%	69	76.7%	9.994	0.236	3	0.019***
Sit and talk	3	1.7%	0	0.0%	3	3.3%				
Do some other work	22	12.2%	10	11.1%	12	13.3%				
None	6	3.3%	0	0.0%	6	6.7%				

(***) represents significant variations following chi square analysis at $p < 0.05$

Table 5 shows the respondents socio-demographic factors that were statistically significant; friends at school ($p=0.004$), whether the respondents parents used drugs ($p=0.013$), suspended from school before ($p = 0.000$), number of times suspended from school ($p= 0.002$), reasons for suspension ($p= 0.001$) and finally, the type of punishment used at school ($p= 0.019$). They frequencies of the responses to these factors differed significantly between the control and experimental groups respectively. Other factors such as; the friends at home, types of drugs used, number of times they missed school and punishment used at home were not significantly distributed among control and experimental groups of respondents ($p > 0.05$).

Table 5 revealed that the respondents in this study had various family settings. Most of the respondents were living with both of their biological parents together (118, 65.6%). An equal number of respondents live with parents that have separated and others with step parents (17, 9.4%) and (18, 10%) respectively. Some respondents have their parents divorced (3, 1.7%) and 20 (11.1%) of the children live with a single parent. Their distribution to both the control and experimental groups was not statistically significant ($p > 0.05$). Furthermore, many of the respondents come from poor economic background (127, 70.6%) while 48 (26.7%) are considered middle class and only 5 (2.8%) come from rich families in the entire study. There was significant variations among the poor, middle class and the rich distributed between the control and experimental study groups ($p = 0.000$).

The respondents came from families with different numbers of family members; many of them are from families with between 5-7 family members (115, 64.2%), followed by between 2-4, 8-10, 11-13 and 14-17 family members with (38, 21.2%), (22, 12.2%), (3, 1.8%), (1, 0.6%) respectively as categorized from the entire distribution.

The variation between the control and experimental groups were not statistically significant ($p > 0.05$). The relationship between the respondents and their parents was close for 76 (42.2%), conflicted for 88(48.9%) and distant for 16(8.9%) respectively. The differences in the distribution in the control verses the experimental group was statistically significant ($p = 0.000$). There was an even distribution of the parents in this study who do not use alcohol (157, 87.2%) to those that use alcohol for 23(12.8%) when distributed between the control and experimental groups respectively ($p > 0.05$). As for those that take drugs, a similar trend was observed for those that used drugs; others take alcohol together with other drugs such as cigarettes (1, 0.6%), mirraa and cigarettes (1, 0.6%) and only 9(5.1%) of the respondents parents used cigarettes alone.

Risk factors for ODD in relation to parent's socio-demographic information

Chi Square analysis on the risk factors showed that the level of education was directly associated with ODD towards peers ($X^2 = 20.126$, $\Phi = 0.395$, $p = 0.010$) while there was no association between ODD towards the adults and the level of education. Moreover, children whose parents were casual laborers were significantly associated with ODD towards adults and peers respectively ($p < 0.05$). Similarly, the number of children in the families was associated with ODD towards the adults ($X^2 = 30.728$, $\Phi = 0.488$, $p = 0.006$). Those who had never gone for counseling previously showed that they had significant association with ODD towards adults ($X^2 = 7.747$, $\Phi = 0.245$, $p = 0.021$). Equally, the reason for seeking counseling was significantly associated with the ODD towards the peers ($X^2 = 180.967$, $\Phi = 1.003$, $p = 0.000$).

Other factors such as the source of income if not employed, number of children in the family and relationship with spouse showed significant association with both ODD

Table 6. ODD in relation to Risk factors

Factors	Total (n = 180)		Control (n = 90)		Experimental n =90		ODD	X^2	phi	p value
	N	%	N	%	n	%				
Family setting										
Both biological parents	118	(65.6%)	52	57.8%	66	73.3%	Adults	3.244	0.134	0.975
Living with a step parent	17	(9.4%)	8	8.9%	9	9.4%	Peers	14.191	0.281	0.164
Parents separated	18	(9.4%)	10	11.1%	8	8.9%				
Parents divorced	3	(1.7%)	3	3.3%	0	0.0%				
Single parent	20	(11.7%)	15	16.7%	5	5.6%				
Living with guardian	4	2.2%	2	2.2%	2	2.2%				
Family economic status										
Poor	128	(71.1%)	83	92.2%	45	50%	Adults	12.926	0.268	0.012***
Middle class	48	(26.7%)	7	7.8%	41	45.6%	Peers	6.344	0.188	0.175
Rich	4	(2.2%)	0	0.0%	4	4.4%				
Number of family members										
2-4	39	(21.7%)	20	22.2%	19	21.1%	Adults	3.099	0.131	0.796
5-7	115	(64.2%)	60	66.7%	55	61.1%	Peers	0.947	0.073	0.988
8-10	24	(13.4%)	10	11.1%	14	15.5%				
14-17	2	(1.1%)	0	0.0%	2	2.2%				
Relations with parents										
Close	76	(42.2%)	23	25.6%	53	58.9%	Adults	4.133	0.152	0.388
Conflicted	88	(48.9%)	54	60%	34	37.8%	Peers	10.940	0.247	0.027***
Distant	16	(8.9%)	13	14.4%	3	3.3%				
Do parents take alcohol										
No	159	(88.3%)	79	87.8%	80	88.9%	Adults	0.224	0.035	0.894
Yes	21	(11.7%)	11	12.2%	10	11.1%	Peers	0.443	0.050	0.801
Drugs used by parents										
No answer	164	(91.1%)	83	92.2%	81	91.1%	Adults	2.806	0.125	0.946
Alcohol or wine	4	(2.2%)	3	3.3%	1	1.1%	Peers	1.410	0.089	0.994
Alcohol, mirraa, Cigarettes	1	(0.6%)	0	0.0%	1	1.1%				
Cigarettes	10	(5.6%)	3	3.3%	7	7.8%				
Cigarettes, alcohol	1	(0.6%)	1	1.1%	0	0.0%				

(***) represents significant variations following chi square analysis at $p < 0.05$

towards adult and peers respectively ($p < 0.05$). Other factors such as how the parents spend their time with children, not going for counseling showed significant association with ODD towards adults and peers ($p < 0.05$) respectively. Furthermore, risk factors such as how the family manages their conflict, mode of punishment by the parents to their children, the type of neighborhood and stress management were significantly associated with ODD towards peers

($p < 0.05$). Other factors such as, language, religion, other religion, marital status, nature of employment, employment status, types of jobs for those employed, relationship with the child, time spend with the child, parents use of drugs, types of drugs, and whether the child refuses to be sent were not associated to either ODD towards adults and peers ($p > 0.05$) respectively.

Table 7a. ODD risk factors for parent's survey.

Factors	Total n=180		Control n=90		Experimental n = 90		ODD	X ²	phi	p value	
	N	%	N	%	N	%					
Parents age											
	20-30 years	28	21.7%	17	21.5%	11	22.0%	Adults	10.676	0.288	0.221
	31-40 yrs	64	49.6%	38	48.1%	26	52.0%	Peers	2.069	0.127	0.979
	41-50 yrs	29	22.5%	22	27.8%	7	14.0%				
	51-60 yrs	7	5.4%	2	2.5%	5	10.0%				
	61-70 yrs	1	0.8%	0	0.0%	1	2.0%				
Gender											
	Male	43	33.3%	26	32.9%	17	34.0%	Adults	1.673	0.114	0.433
	Female	86	66.7%	53	67.1%	33	66.0%	Peers	2.706	0.145	0.258
Language											
	Kiswahili	112	86.8%	67	84.8%	45	90.0%	Adults	0.214	0.041	0.898
	English	17	13.2%	12	15.2%	5	10%	Peers	0.193	0.039	0.908
Religion											
	Roman Catholic	30	23.3%	21	26.6%	9	18%	Adults	10.519	0.286	0.230
	Protestants	61	47.3%	41	51.9%	20	40%	Peers	8.101	0.251	0.424
	Seventh Day	14	10.9%	4	5.1%	10	20%				
	Anglican	19	14.7%	10	12.7%	9	18.0%				
	Muslims	5	3.9%	3	3.8%	2	4.0%				
Marital Status											
	Single	28	21.7%	21	26.6%	7	14.0%	Adults	1.166	0.095	0.979
	Married	86	66.7%	49	62.0%	37	74.0%	Peers	2.898	0.150	0.822
	Widowed	9	7.0%	4	5.1%	5	10%				
	Divorced	6	4.7%	5	6.3%	1	2.0%				
Education											
	Never attended school	7	5.4%	4	5.1%	3	6.0%	Adults	4.068	0.178	0.851
	Primary	73	56.6%	48	65.8%	25	50%	Peers	20.126	0.395	0.010***
	Secondary school	38	29.5%	19	24.1%	19	38%				
	College	9	7.0%	7	8.9%	2	4.0%				
	University	2	1.6%	1	1.3%	1	1.3%				
Employment											
	Yes	97	75.2%	56	70.9%	41	82%	Adults	2.234	0.132	0.327
	No	32	24.8%	23	29.1%	9	18%	Peers	2.295	0.133	0.317
	Casual	51	28.9%					Adults	143.285	1.054	0.003***
								Peers	151.777	1.085	0.001***
How many children											
	1	9	6.2%	6	7.6%	2	4.0%	Adults	30.728	0.488	0.006***
	2	19	14.7%	13	16.5%	6	12%	Peers	7.350	0.239	0.920
	3	27	20.9%	16	20.3%	11	22%				
	4	38	29.5%	22	27.8%	16	32%				
	5	21	16.3%	14	17.7%	7	14%				
	6	11	8.5%	6	7.6%	5	10%				
	7	4	3.1%	2	2.5%	2	2.5%				
	10	1	0.8%	0	0.0%	1	0.8%				
Relationship with spouse											
	Close	63	70.0%	34	64.2%	29	78.4%	Adults	1.503	0.129	0.826
	Conflicted	20	22.2%	15	28.3%	5	13.5%	Peers	2.269	1.159	0.322
	Distant	7	7.8%	4	7.5%	3	8.1%				
Conflict resolution											
	None	95	53.1%	42	46.7%	53	59.6%	Adults	7.684	0.207	0.660
	Divorce	1	0.6%	1	1.1%	0	0.0%	Peers	8.860	0.222	0.545
	Sit and Talk	77	43.0%	41	45.6%	36	40.4%				
	Violence	3	1.1%	3	3.3%	0	0.0%				
	Complicated	1	0.6%	1	1.1%	0	0.0%				
	Silence	2	1.1%	2	2.2%	0	0.0%				
	None	95	53.1%	42	46.7%	53	59.6%				

Table 7b. Children factors in parent's survey.

Factors	Total (n=180)		Control (n= 90)		Experimental n = 90		ODD	X ²	phi	p value
	N	%	N	%	N	%				
Relationship with child										
Close	121	95.3%	74	94.9%	47	95.9%	Adults	3.430	0.164	0.753
Conflicted	2	1.6%	0	0.0%	2	4.1%	Peers	0.538	0.065	0.997
Distant	4	2.2%	4	4.4%	0	0.0%				
Mode of punishment of the child										
Beat/cane/punish	149	82.8%	75	83.3%	74	82.2%	Adults	12.949	0.268	0.227
Sit and talk	16	8.9%	10	11.1%	6	6.7%	Peers	14.431	0.283	0.154
Deny foods	1	0.6%	1	1.1%	0	0.0%				
Do some other work	11	6.1%	4	4.4%	7	7.8%				
None	3	1.7%	0	0.0%	3	3.3%				
Spending time with child										
No	12	9.3%	6	7.6%	6	12%	Adults	0.913	0.084	0.633
Yes	117	90.7%	73	92.4%	44	88%	Peers	0.108	0.029	0.947
if yes, how do you spend time with your child										
Talk and advice	76	65.5%	41	57.7%	35	77.8%	Adults	9.252	0.282	0.508
Teach	10	8.6%	6	8.5%	4	8.9%	Peers	2.611	0.150	0.989
Play	4	3.4%	4	5.5%	0	0.0%				
Supporting the child	7	6.0%	4	5.6%	3	6.7%				
Going to some place	9	7.8%	9	12.7%	0	0.0%				
Going to church	10	8.6%	7	9.9%	3	6.7%				
if no, how do you spend time										
Always busy	6	85.7%	1	50%	5	100	8.023	0.211	8	0.431
He/she in business	1	14.3%	1	50%	0	0.0%				
Do you use drugs										
No	122	94.6%	73	92.4%	49	98%	Adults	2.264	0.132	0.322
Yes	7	5.4%	6	7.6%	1	2.0%	Peers	0.658	0.071	0.720
If yes, which drugs										
No answer	177	98.3%	88	97.8%	89	98.9%	Adults	8.001	0.249	0.238
Cigarrattes	1	0.6%	1	1.1%	0	0.0%	Peers	0.258	0.045	1.000
Insulin	1	0.6%	0	0.0%	1	1.1%				
Tusker	1	0.6%	1	1.1%	0	0.0%				
Does a child refuse to go when sent										
No	108	83.7%	70	88.6%	38	76%	Adults	1.174	0.095	0.556
Yes	21	16.3%	9	11.4%	12	24%	Peers	2.108	0.128	0.349
Child ever gone for counseling										
No	121	93.8%	75	94.9%	46	92%	Adults	7.747	0.245	0.021***
Yes	8	6.2%	4	5.1%	2	8.0%	Peers	0.717	0.075	0.699
Reason for counseling										
No Answer	173	96.1%	87	96.7%	86	95.6%	Adults	7.057	0.198	0.932
Disrespectful	1	0.6%	0	0.0%	1	1.1%	Peers	180.967	1.003	0.000***
Fighting	1	0.6%	1	1.1%	0	0.0%				
Went for church counseling	1	0.6%	0	0.0%	1	1.1%				
To know his status	1	0.6%	1	1.1%	0	0.0%				
To get life skills	1	0.6%	0	0.0%	1	1.1%				
Provided by church	1	0.6%	1	1.1%	0	0.0%				
Their father left them	1	0.6%	0	0.0%	1	1.1%				
Type of neighbor hood										
Good and peaceful	94	74%	65	84.4%	29	58.0%	Adults	8.297	0.256	0.762
Alcoholism	15	11.8%	6	7.8%	9	18.0%	Peers	18.953	0.386	0.090
Slum and mixed dwelling	6	4.7%	3	3.9%	3	6.0%				
Very noisy and dirty	7	5.5%	1	1.3%	6	12.0%				
Secluded	3	2.4%	0	0.0%	3	6.0%				
Insecure	2	1.6%	2	2.6%	0	0.0%				
Management of stress										
Avoid people/sleep/ Crying	51	39.5%	35	44.3%	16	32.0%				
Management of stress										
Singling/listening to music	8	6.2%	5	6.3%	3	6.0%	Adults	3.545	0.166	0.966
Share with friends	15	11.6%	8	10.1%	7	14.0%	Peers	10.583	0.286	0.391
Watching movies	4	3.1%	3	3.8%	1	2.0%				
Drink water	4	3.1%	2	2.5%	2	4.0%				
No Answer	173	96.1%	87	96.7%	86	95.6%				
Disrespectful	1	0.6%	0	0.0%	1	1.1%				
Fighting	1	0.6%	1	1.1%	0	0.0%				
Went for church counseling	1	0.6%	0	0.0%	1	1.1%				

(***) represents significant variations following chi square analysis at p<0.05

Discussion

The objective of this study was to determine the risk factors associated with oppositional defiant disorder among children. On the basis of gender, the female respondents were more than the male respondents this is according to the distribution 77(43.3%) and 99 (56.7%) for males and females respectively the fact that in recent times, there has been a concerted effort to empower the girl child as observed by Gitonga, Muriungi, and Ongaro, and Omondi, (2017) this could be the reason there were more female than male. There was a relationship between respondents and educational level. There was significant association between the participants class and ODD towards adults and peers ($X^2=113.649$, $\Phi=0.795$, $p=0.000$; $X^2=95.972$, $\Phi=0.730$, $p=0.002$) respectively. This shows that ODD progresses as they grow and move to the next class.

In addition, there was a statistically significant association between religion and ODD towards adults ($X^2=21.965$, $\Phi=0.349$, $p=0.015$), Protestants were the highest in their distributions (80, 44.4%). Majority of the respondents were Protestants implies that religion is either a protective or a precipitating factor in children with ODD. This is consistent with recent religious composition in Kenya according to the Kenya Religions Statistics (2006) cited in Gitonga, Muriungi, and Ongaro, and Omondi, which reported Protestant to be 45%, Roman Catholic to be 33%, indigenous beliefs at 10%, Muslims at 10% and others to be 2%.

The study also revealed that the majority of the respondents had never been suspended from school. There was a significant relationship between children who were never suspended from school and ODD at ($p=0.000$), number of times suspended from school ($p=0.002$) and reasons for suspension ($p=0.001$). The implication of this is that it is possible that despite the respondent's defiant behavior the teachers prefer other modes of punishment other than sending the children home for example beating.

Friends at school ($p=0.004$) was also significantly associated with children with ODD, this implies that that friends could be contributing to the participants behavioral problems or acts as a protective factor to the respondents with ODD. The respondents reported that their parents never use drugs which is a protective factor to the respondents however in association to ODD there was a significant at ($p=0.013$) which revealed that despite the fact that the parents don't use drugs other factors in the environment other than drugs had contributed to the development of ODD and caused significant problems to the respondents adjustment.

From the findings the highest number of participants had never gone for counseling before. Those who had never gone for counseling showed that they had significant association with ODD towards adults ($X^2=7.747$, $\Phi=0.245$, $p=0.021$). This implies that most parents had not sought counseling for their children despite the fact that they have behavioral problems. This could be because of the financial implication due to the fact that the participants come from low social-economic background, so their parents could not afford. Another reason could be lack of awareness of how mental disorders manifest hence they might not know what to do with a child who presents with behavioral problems.

The level of education was directly associated with ODD towards peers ($X^2=20.126$, $\Phi=0.395$, $p=0.010$). The highest number of the respondent's parents attended school up to the primary school level. This implies that most of the parents were not aware that their children had a behavioral disorder and hence could not seek psychological help for their child

which was a greater risk for the development and progression of ODD. This is consistent with the response where most of the children had never been taken for counseling.

Social-economic status was significantly associated with ODD at ($p=0.000$) which shows that many of the participants came from poor economic background (127, 70.6%) while 48 (26.7%) are considered middle class and only 5 (2.8%) come from rich families in the entire study. Most of the participants came from poor economic background (127, 70.6%). According to Xiaoli et al., (2014) individual, family and socio economic status (SES) characteristics may play a significant role in the onset of psychopathology in this developmental age. A few studies have shown higher prevalence rates of psychiatric disorders in children and adolescents who live in developing countries when compared to their peers from developed countries, probably due to their poor socio-economic conditions and the higher environmental difficulties faced by the children and adolescents who live in less developed countries.

The relationship between the respondents and their parents was conflicted for 88 (48.9%) ($P=0.027$). Conflicted relationship with parents showed a significant relationship with ODD. As evident from the findings of the study, the relationship between the respondents and their parents was close for 76 (42.2%), conflicted for 88 (48.9%) and distant for 16 (8.9%) respectively. According to the reviewed literature reported by Ralph and Sanders, (2003) conflict with parents has been found to be strongly associated with contact with antisocial peers and substance use. High levels of positive family relations, parental monitoring, rule setting, and positive reinforcement for appropriate behavior are associated with less contact with disruptive peers, less engagement in antisocial behavior and less substance use.

Similarly, poor parent-child relationship appeared to be a robust risk factor of children's behavioral adjustment negative parent-child relationships were significantly associated with child externalizing disorders such as ODD (Burt, McGue, Krueger, & Iacono (2005). Family cohesion, as one aspect of family function, was negatively correlated with child internalizing and externalizing problems (Lucia & Breslau, 2006). Children in such families were less likely to develop behavioral problems. In cohesive and well-adapted families, members were prone to interact with each other in a harmonious manner, which further promoted parental and children's emotion regulation abilities.

From the findings harsh punishment was a risk factor to the development of ODD. The type of punishment used at school for example beating was significantly associated with ODD ($p=0.019$). Although most of the literature shows that harsh punishment from parents is a risk factor to ODD it was strongly associated with teachers and weakly associated with parents. This is inconsistent with Hood, Elrod, and DeWine, (2015) who reported that psychosocial dysfunction has been implicated in the development of ODD. It is associated with harsh, inconsistent, or neglectful parenting practices.

There was a significant relationship between ODD and number of children. The number of children in the families was associated with ODD towards the adults ($X^2=30.728$, $\Phi=0.488$, $p=0.006$). The number of children in the family could be a risk factor to the development of ODD because the it might be possible that parents do not pay attention to their children's behavior hence will act out. The fact that the respondents live in a slum setting with poor housing could be

a risk to behavioral problem since most of the families live in a single room this causes congestion due to lack of enough space.

Conclusion

From the findings of this study, primary school children had ODD which were associated with the following risk factors; punishment in school, low socio-economic status, not going for counseling, conflicted relationship with parents, suspension from school, educational level of the respondents which was high in students in class seven, friends, number of children, educational level of the parents, type of neighborhood, religion. Although most respondents reported beating as the mode of punishment used at home it was not associated with ODD which contradicts the most literature reviewed that shows harsh punishment by parents as a risk for the development of ODD, this means that parents use other modes of punishment other than beating.

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