



RESEARCH ARTICLE

THE COMORBID CONDITION WITH OPPOSITIONAL DEFIANT DISORDER AMONG CHILDREN IN SELECTED PRIMARY SCHOOLS IN NAIROBI COUNTY, KENYA

* Susan Chang'orok, Ph.D

Daystar University

ARTICLE INFO

Article History:

Received 27th December, 2018
Received in revised form
28th January, 2019
Accepted 17th February, 2019
Published online 30th March, 2019

Keywords:

Oppositional defiant disorder, Attention deficit hyperactivity, Comorbidity, Prevalence, Child and Adolescent Disruptive Behavior Inventory.

ABSTRACT

The purpose of this study was to determine the comorbid condition with oppositional defiant disorder (ODD) among Children in Selected primary schools in Nairobi County, Kenya. Oppositional defiance disorder is a common mental health problem among children. Quasi experimental research design was used in the study with a sample of 180 respondents. Purposive sampling was used in selecting the two schools. 315 respondents completed the demographic questionnaires, Teachers and parents completed the Child and Adolescent Disruptive Behavior Inventory (CADBI). Systematic sampling method was applied on 249 participants to acquire the required sample size. Data collected was analyzed using SPSS version 23. The positive correlation showed that there was positive association between items identified for measuring ODD towards adults, ODD towards peers and ADHD in the study population at baseline survey both by the teachers and parents. This study revealed that ADHD is a comorbid condition with ODD. Psychologists should be trained on the administration of CADBI in order to carry out assessment and offer timely intervention to treat the existing condition with ODD in primary schools children. This will help the children interact better with their peers and also improve their academic performance.

Copyright © 2019, Susan Chang'orok, This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

According to the American Psychiatric Association (2013), ODD is classified under disruptive, impulse-control, and conduct disorders. For the diagnosis of ODD to be met, there should be a pattern of angry/irritable mood, argumentative/defiant behavior, or vindictiveness lasting at least six months. In children with ODD, there is an ongoing pattern of uncooperative, defiant, and hostile behavior toward authority figures that seriously interferes with the child's day to day functioning. Other 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). Major (2013) pointed out that young children with ODD are characterized by their deliberate use of disruptive behaviors planned to annoy, undermine, and embarrass others, particularly those in authority. ODD takes a toll on the family since having a family member with a psychopathology is quite difficult for the family. The presence of ODD causes distress in the family.

Co-morbidity according to Lehman (2009) is a condition that occurs at the same time as another. Conditions that coexist with ODD in particular present yet another concern. Mishra, Garg, and Desai, (2014) reported that Children are the most important assets and wealth of a nation. Healthy children make a healthy nation. The children under 15 years of age constitute about 40% of the population and school aged children i.e. 6 to 14 years age constitute 22% of children population. The child is not a miniature, but an individual in his own right. The quality of childhood one has lived will determine the ultimate nature of adulthood. The foundations of child's social attitude and skills are laid in the home. Nowadays, because of the rapid industrialization and urbanization, majority of young couples are employed, so unavoidably they get less. Additionally, behavior problems cause discomfort in childhood and disrupt family and social activities children with behavior or emotional problems are more likely to have similar problems later in life. It is said that. Thus, behavioral problem in childhood could be the stepping-stones to more serious problems in the form of adult psychiatric disorders. ODD is the most common disruptive disorder in childhood. In recent years, ODD has received a lot of interest because of the high level of comorbidity that it usually presents (Cunningham & Ollendick, 2010). Accordingly, Türkog̃lu, Bilgiç, and Akça (2015) Attention-deficit-hyperactivity disorder (ADHD) is one of the most common psychiatric conditions in childhood, affecting 3–10% of school-aged children. It is characterized by persistent patterns of inattention and/or hyperactivity impulsivity that

cause impairment in at least two settings (e.g. school and home). The symptoms of ADHD often lead to functional impairment in multiple domains of life; therefore, in recent years, the focus of intervention has expanded from treating the immediate symptoms of ADHD to improving functionality in entire life domains.

Further, in their study Afeti, and Nyarko, (2017) reported that ADHD can be counted as a major public health issue due to its prevalence and chronic nature, and its potential to interfere with different areas of developmental relevance. Also, ADHD has effects on the school performance of children. Children with more symptoms of ADHD, including impulsiveness or restlessness, have significantly lower math and reading scores on standardized tests, increased probability of class repetition, enrollment in special education, and delinquency, which includes behaviors such as stealing, hitting people, or using drugs. Therefore, providing effective and safe treatments for aggression and other disruptive behavior is of extreme importance. According to the DSM-5 (2013), the most common co-occurring condition with ODD is ADHD. ODD is also a potent precursor/mediator of other disorders, and its early detection is crucial for breaking the chain of complications (Burke et al., 2005). The disorders most often associated with ODD include attention deficit/hyperactivity disorder (ADHD). The Outcome from a 4-year longitudinal study in Turkey carried out by Ercan et al. (2013) mentioned that the main comorbid diagnose for ODD in the four waves was ADHD: ADHD prevalence was calculated to be 13.38% in the first wave, 12.53% in the second wave, 12.22% in the third wave and 12.91% in the fourth wave. Research by Serra-Pinheiro, Schmitz, Mattos and Souza,(2004) reported that in a community samples of children in Brazil Rio de Janeiro reported that ODD is also highly comorbid with Attention-Deficit Hyperactivity Disorder (ADHD), being present in around 50% of these patients. In relation to this, McKinney and Renk (2007) were of the view that in a community sample, children with ODD are four times more likely to be diagnosed with ADHD. Based on finding from a study carried out in the United States, Cook (2005) stated that up to 80% of children had ODD co-morbid with ADHD.

Steiner and Remsing (2007) were in agreement with Lehman (2009) and Cook (2005) in their claim that ODD is frequently co-morbid with other psychiatric conditions and often preceded the development of CD, substance abuse, and severely delinquent behavior. This was also similar to Fossum's (2008) findings that ADHD in children with ODD was regarded as an indicator for the early onset of CD. Fossum added that parent and teacher ratings indicate that co-morbid ODD and ADHD are associated with higher social impairment in children. Other findings by Cabiya, Canino, and Chávez (2006) showed that, the greater impact in boys, regardless of co-morbidity, together with the association with ADHD, may explain why specialists help is more often sought for boys than for girls. The researcher is in agreement with Cabiya et al.'s (2006), findings in the observation that in a clinical setting, most of the children seeking psychological or psychiatric help with externalizing problems are boys. For the purpose of this study, the researcher will only focus on ADHD as the comorbid condition with ODD. Pringsheim, Hirsch, Gardner and Gorman (2015) reported that there are common psychiatric diagnoses in childhood, with 4.1% of Canadian school-age children diagnosed with ADHD, 1% to 6% of children with ODD. Population-based data from the British Child Mental

Health Survey have shown that, among children diagnosed with ADHD, the rate of comorbid ODD is about 30%. While it was previously thought that children eventually outgrow ADHD, recent studies suggest that 30–60% of affected children continue to show significant symptoms of the disorder during adulthood.

According to a study by Satake, Yamashita, and Yoshida (2004) ODD was found to coexist in as many as 35% of children with ADHD. Moreover, it was reported that ODD has many risk correlates (e.g. low socio-economic status, parent antisocial personality disorder, and unskilled parenting practices). Such a high rate of comorbidity led to clinician's interest in whether correlates of ADHD (e.g. social function, outcome, treatment reactivity) differ according to coexistence of ODD and a lot of research has been conducted, mainly in Western countries. Among such studies there are many studies investigating psychosocial characteristics of families. The prevalence rate of Attention Deficit-Hyperactivity Disorder (ADHD) in Japan is reported to be about 7.7% which was almost equivalent to the prevalence of 4 to 6% estimated in America. In a study carried out in Ghana the prevalence was presented as the prevalence for males (14.41%), the prevalence for females (10.53%) and the total prevalence (12.8%) (Afetiand Nyarko, 2017). Another study in Uganda reported that the prevalence of ADHD was 14.9% among male participants as compared to a prevalence of 7.6% among female participants (Wamulugwa, Kakooza, Kitaka, Nalugya, Kaddumukasa, Moore, Sajatovic & Katabira, (2017). Adewuya and Famuyiwa , (2007) found a prevalence of 8.7% among primary school children ages 7–12 years in Nigeria Research by Noordermeer, Luman, Weeda, Buitelaar, Richards, Hartman, Hoekstra , Franke , Heslenfeld and Oosterlaan (2017) observed that individuals with both ADHD and ODD have a considerably worse prognosis than individuals with either one of the disorders in terms of an increased risk to develop anxiety and depressive disorders as well as conduct disorder and even antisocial personality disorder later in life. Furthermore, the comorbid group shows an earlier onset with more functional impairments and exhibits more physical aggression and delinquency than individuals with ADHD or ODD alone.

METHODOLOGY

This study utilized the 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; the CADBI was filled by the parents and teachers. A total of 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. During the study period a total of 4 respondents dropped out bringing the number of participants 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 variables. The CADBI tool (both parents and teacher versions) were completed to help in the assessment of children with ODD. CADBI tool has proved to have good reliability and validity for describing ODD symptoms. Spearman correlation was performed to test for associations between timelines and significant association between timelines reported at a $p < 0.05$. 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. Descriptive statistics for frequencies was performed for the responses to determine the responses for the different categories.

RESULTS

Socio-Demographic Characteristics Distribution of respondents by Age, Gender and Class Table 1 presents the distribution of the respondents by Age. 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. From the findings the majority of the respondents in the study were ages 12. Table 2 presents the distribution of the respondents by gender. On the basis of gender, distribution was 77(43.3%) and 99 (56.7%) for males and females respectively from the table above the majority of the respondents were female who were the highest in the distribution compared to the male respondents. These indicated that there female respondents were more than the male respondents.

Table 3 presents the distribution of the respondents by their academic level. On education level; the respondents were mainly distributed between classes 4 to standard 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. The results indicated that the majority of the respondents were in standard seven. Table 4 presents the reliability test per construct. All construct items applied in the study were above the cut-off of .70, implying that the constructs are internally consistent and therefore measure the same concept Cronbach's values per constructs were as presented in Table 4. Cronbach's value of between 0.7 and 0.8 is good, while 0.8 to 0.9 is great and above 0.9 is superb. All the values in this study had Cronbach's values above 0.8 indicating that they were great and superb. These showed that the constructs in the CADBI tool were reliable in measuring evaluating comorbidity in the study subjects as anticipated. Table 5 presents the correlation between ODD towards adults, peers and ADHD at baseline. Spearman's correlation analysis was performed for this study as a measure of association between the studied constructs. In the baseline survey, a correlation analysis of this items in the three constructs showed that there was significant positive correlation between ODD towards Adults and ODD towards peers ($r=0.331$, $p=0.000$), and ODD towards adults and ADHD ($r=0.220$; $p = 0.003$).

Table 1. Distribution by Age

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%)
Total	180 (100%)	180 (100%)	176 (100%)

Table 2. Distribution by Gender

Timeline	N	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	56.1%	180
Midline						
Control	35		38.9%	55	61.1%	90
Experimental	44		48.9%	46	51.1%	90
Total	79		43.9%	101	56.1%	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

Table 3. Class Distribution of the Respondents

Class	4		5		6		7		Total
	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 4. Reliability Test Per Constructs

Constructs	Baseline		Midline		Endline	
	Teachers (N=180)	Parents (N=129)	Teachers (N=180)	Parents (N=129)	Teachers (N=180)	Parents (N=129)
ODD Adults	0.891	0.819	0.970	0.976	0.969	0.937
ODD peers	0.862	0.760	0.970	0.975	0.980	0.953
ADHD	0.889	0.876	0.946	0.925	0.968	0.924
All Items	0.918	0.890	0.982	0.978	0.986	0.972

Table 5. Correlation Analysis for Baseline

Constructs		Teachers			Parents		
		ODD Adults	ODD peers	ADHD	ODD Adults	ODD peers	ADHD
ODD ADULTS	R	1.000	.341**	.220**	1.000	.441**	.241**
	Sig	.	.000	.003	.	.000	.006
	N	180	180	180	129	129	129
ODD PEERS	R		1.000	.272**		1.000	.354**
	Sig		.	.000		.	.000
	N		180	180		129	129
ADHD	R			1.000			1.000
	Sig			.			.
	N			180			129

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6. Prevalence of ADHD

Group	Gender	N	ADHD (Teachers)	ADHD (Parents)
Baseline	Males	78	65 (83.3%)	38 (48.7%)
	Females	102	76 (74.5%)	48 (47.1%)
	Males + Females	180	141 (78.3%)	86 (47.8%)
Midline	Males	78	54 (69.2%)	50 (64.1%)
	Females	102	76 (74.5%)	44 (43.1%)
	Males + Females	180	114 (63.3%)	94 (52.2%)
Endline	Males	77	37 (47.4%)	15 (19.2%)
	Females	99	45 (44.1%)	34 (33.3%)
	Males + Females	176	82 (45.6%)	49 (27.2%)

Furthermore, ODD towards peers was also positively correlated to ADHD in the selected respondents ($r=0.272$; $p=0.000$) in the teachers survey. This indicated that ODD is associated with ADHD based on the teachers survey study findings. Based on the data collected from the parents, a positive correlation between ODD towards adults was weakly correlated to the ODD towards the peers ($r=0.441$; $p=0.001$). There was also a significant positive correlation between ODD towards the adults and ADHD in the respondents selected for this study ($r=0.241$; $p=0.006$). Similarly, a significant correlation was observed between ODD towards peers and ADHD in the selected respondents ($r=0.354$; $p=0.000$). The positive correlation showed that there is positive association between items identified for measuring ODD towards adults, ODD towards peers and ADHD in the study population at baseline survey both by the teachers and parents.

Co-morbid condition with ODD (ADHD): The objective of the study was to identify the comorbid condition with ODD. The study also determined the prevalence of ADHD among the respondents. ADHD was calculated based on the responses of the teachers and parents. Table 6 presents the prevalence of ADHD. The study findings showed that the males had higher prevalence of ADHD compared to the females (83.3% Vs 74.5%) for the teachers and 48.7% Vs 47.1%) for the parents. When both males and females were combined, the prevalence of ADHD in the teacher's survey was higher compared to the parents (78.3% Vs 47.8%) respectively. In the midline teacher's survey, the females had higher prevalence of ADHD (74.5%) compared to the boys (69.2%). On the contrary, the males had higher prevalence of ADHD (64.1%) compared to

the females (43.1%). When both genders were combined, the teacher's survey showed a higher prevalence of ADHD among the respondents (63.3%) compared to the parents' survey (52.2%) which was similar to the trend observed in the baseline study. This indicated that the males presented with more ADHD symptoms than females. Moreover, in the endline teachers survey, the males had higher prevalence of ADHD (47.4%) compared to their female counterparts (44.1%); whereas in the parent's endline survey, the females had a higher prevalence score compared to the men (33.3% Vs 19.2%), a similar trend as that of the midline survey. Both the males and females combined, the teachers survey showed a higher prevalence of ADHD (45.6%) compared to the parents' survey (27.2%). The reason for this discrepancy could be that teachers spend more hours with children in school and in the classroom hence it is possible for them to observe high activity level than parents.

DISCUSSION

The objective of the study was to identify the co-morbid conditions with ODD among children in selected primary schools. This study focused on ADHD as a comorbid condition. From the findings the female respondents were more than the male respondents. From the distribution the male were 77(43.3%) and the female were 99 (56.7%). Most of the respondents were in class 7 (40.7%) with their numbers decreasing from class 6 (27.7%), class 5 (27.7%) and class 4 (3.9%) respectively. The correlation showed that there is positive association between items identified for measuring ODD towards adults, ODD towards peers and ADHD in the study population at baseline survey both by the teachers and

parents. According to the results of this study there is a significant association between ODD and ADHD. This was consistent with the reviewed literature that ODD is in comorbid with ADHD carried out by McKinney and Renk (2007) which revealed in a community sample, children with ODD are four times more likely to be diagnosed with ADHD. Similarly, Taylor, Burns, Rusby, and Foster, (2006) in their study pointed out Oppositional to teachers correlated with oppositional to peers ($r = .79$), oppositional to teachers correlated with hyperactive ($r = .67$), and oppositional to peers correlated with hyperactive ($r = .75$). Although these latent constructs were highly correlated, they were not identical. The final model achieved adequate fit (for interval data RMSEA = 0.047; SRMR = 0.053; CFI = 0.927; for ordinal data RMSEA = 0.062; CFI = 0.950). Although the study only focused on Teachers as informants in this study it showed that there is an association between ODD and ADHD. Population-based data from the British Child Mental Health Survey have shown that, among children diagnosed with ADHD, the rate of comorbid ODD is about 30% (Pringsheim, Hirsch, Gardner & Gorman (2015). According to a study by Satake, Yamashita, and Yoshida (2004) ODD was found to coexist in as many as 35% of children with ADHD. The study also revealed the prevalence of ADHD with males had higher prevalence of ADHD compared to the females (83.3% vs 74.5%) for the teachers and 48.7% vs 47.1% for the parents.

When both the males and females were combined, the prevalence of ADHD in the teacher's survey was higher compared to the parents (78.3% vs 47.8%) respectively. The discrepancy between teachers and parents could be because the teachers spend a lot of time with the children in school as compared to parents. Teachers are more reliable informants regarding conduct and hyperactivity disorders. A multi-informant approach to the assessment of ODD is therefore warranted, and in order to examine informant-specific associations with comorbid conditions, parent and teacher ratings need to be studied separately (Goodman, Ford, Simmons, Gatward & Meltzer, 2003). In a study carried out in Ghana the prevalence was presented as the prevalence for males (14.41%), the prevalence for females (10.53%) and the total prevalence (12.8%). This study shows a higher prevalence in Kenya as compared to Ghana (Afeti & Nyarko, 2017). A study by Kilic and Şener (2005) found high rates for oppositional defiant disorder 46% and ADHD 69.6% in children in Turkey. Another study reported that the prevalence of ADHD was 14.9% among male participants as compared to a prevalence of 7.6% among female respondents (Wamulugwa, Kakooza, Kitaka, Nalugya, Kaddumukasa, Moore, Sajatovic & Katabira, (2017). In this study although the prevalence was higher in males as compared to female it is incomparable to this study. The discrepancy noted in the prevalence might be because of the target population of the study, the slum setting where the study was done or the age of the respondents.

Limitations of the Study

- The study did not establish what type of ADHD (i.e. inattention, hyperactive or combined type) is comorbid with ODD among male and female respondents.
- The researcher did not use a tool that the children would fill in order to compare the results with those reported by teachers and parents. The researcher couldn't establish whether the parents and the

teacher's reports were consistent with the respondents in the study.

- The researcher was not able to get all the parents to fill the CADBI (parent's version) forms because most of the parent's works as casual labours hence were not able to participate in the study. The study couldn't get the child's behaviours at home and the community environment.
- Children younger than 9 and older than 14 should be included in the study since ODD and ADHD manifest at a younger age.

Areas of Further Research

- Further studies could be done to determine what type of ADHD (The inattention, hyperactive or combined type) is comorbid with ODD among different gender.
- There is need to Replication of this study should be done in other institutions like hospitals and charitable children institutions
- Further study would be carried out to determine other comorbid conditions with ODD for example; anxiety disorders in the Kenyan setting.
- Another study should be carried out to establish the prevalence of mental disorders on parents whose children have ODD in comorbid with ADHD could be carried out.
- Another study could be carried out to establish the effect of ADHD and ODD on children's performance.
- Another study should be carried out to determine factors that place the male at a higher risk of developing ADHD than their female counterparts.

Conclusion

From the study findings, it is evident that ADHD exists in children with ODD. The study also revealed that ADHD is more prevalent among boys than in girls. This study also is in agreement with existing literature that ODD is in comorbid with ADHD. The CADBI tool was the ideal for the assessment of ADHD and ODD hence the researcher recommends that it should be adapted. Additionally, the results also revealed that ADHD manifests more in the school setting than at home. The tool is also ideal since it assesses the behaviors of the child both at school and home, hence more credible information from the teachers and parents as informants.

REFERENCES

- Adewuya AO, Famuyiwa OO. 2007. Attention deficit hyperactivity disorder among Nigerian primary school children: prevalence and co-morbid conditions. *European Child Adolescent Psychiatry*,16(1):10–5.
- Afeti,K& Nyarko,H. S. 2017. Prevalence and effect of attention deficit/hyperactivity disorder on school performance among primary school pupils in the Hohoe Municipality, Ghana. Afeti and Nyarko *Annals General Psychiatry* 16(11) DOI 10.1186/s12991-017-0135-5
- American Academy of Child Adolescent Psychiatry. 2013. Facts for families: Children with oppositional defiant disorder. Retrieved from Error! Hyperlink reference not valid.

- American Psychiatric Association. 2013. Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author.
- Burke, J.D., Loeber, R., Lahey, B.B. and Rathouz, P.J. 2005. Developmental transitions among affective and behavioral disorders in adolescent boys. *Journal of Child Psychology and Psychiatry*, 46, 1200-1210
- Cabiya, J. A., Canino, G. and Chavez, L. 2006. Gender disparities in mental health service use of Puerto Rican children and adolescents. *Journal of Child Psychology and Psychiatry*, 47(8), 840-848.
- Cook, M. N. 2005. The disruptive or ADHD child: What to do when kids won't sit still and be quiet. *Focus on Exceptional Children*, 37(7), 1.
- Cunningham, N.R. and Ollendick, T.H. 2010. Comorbidity of anxiety and conduct problems in children: Implications for clinical research and practice. *Clinical Child and Family Psychology Review*, 13, 333- 347.
- Ercan, E. S., Kandulu, R., Uslu, E., Ardic, U. A., Yazici, K. U., Basay, B. K., ohde, L. A. 2013. Prevalence and diagnostic stability of ADHD and ODD in Turkish children: A 4-year longitudinal study. *Child and Adolescent Psychiatry and Mental Health*, 7(1), 30. doi: 10.1186/1753-2000-7-30.
- Fossum, S. 2008. Effectiveness of interventions and factors of relevance in the treatment of children with conduct problems (Unpublished doctoral dissertation). University of Tromsø, Tromsø, Norway.
- Lehmann, C. N. 2009. Oppositional defiant disorder in adolescents: What school counselors need to know (Unpublished doctoral dissertation). University of Wisconsin-Stout, Menomonie, Wisconsin.
- Major, S. L. 2013. Understanding oppositional defiant disorder and conduct disorder: Diagnosis, demographic variations, behavioral trends, and an Adlerian methodology (Unpublished doctoral dissertation). Adler Graduate School, Minneapolis, MN.
- McKinney, C. and Renk, K. 2007. Emerging research and theory in the etiology of oppositional defiant disorder: Current concerns and future directions. *International journal of behavioral consultation and therapy*, 3(3), 349.
- Mishra, A., Garg, S. P. and Desai, S. N. 2014. Prevalence of oppositional defiant disorder and conduct disorder in primary school children. *Journal of Indian academy of forensic medicine*, 36(3), 246-250.
- Noordermeer, S. D., Luman, M., Weeda, W. D., Buitelaar, J. K., Richards, J. S., Hartman, C. A., & Oosterlaan, J. 2017. Risk factors for comorbid oppositional defiant disorder in attention-deficit/ hyperactivity disorder. *European child & adolescent psychiatry*, 26(10), 1155-1164.
- Pringsheim, T., Hirsch, L., Gardner, D. and Gorman, A. D. 2015. The Pharmacological Management of Oppositional behaviour, conduct problems, and aggression in children and adolescents with attention-deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder: A systematic review and meta-analysis. part 2: Antipsychotics and Traditional Mood Stabilizers. *The Canadian journal of psychiatry*, 60(2):52-61.
- Satake, H., Yamashita, H & Yoshida, K. 2004. The family psychosocial characteristics of children with Attention-deficit hyperactivity disorder with or without oppositional or Conduct Problems in Japan, Error! Hyperlink reference not valid.,34, Error! Hyperlink reference not valid.), pp 219-235.
- Serra-Pinheiro, M. A., Schmitz, M., Mattos, P. and Souza, I. 2004. Oppositional defiant disorder: A review of neurobiological and environmental correlates, comorbidities, treatment and prognosis. *Revista Brasileira de Psiquiatria*, 26(4), 273-276.
- Steiner, L. and Remsing, L. 2007. Practice parameter for the assessment and treatment of children and adolescents with oppositional defiant disorder. *Journal of American academy of child and adolescence psychiatry*, 46(1), 126-141.
- Taylor, T. K., Burns, G. L., Rusby, J. C. and Foster, E. M. 2006. Oppositional defiant disorder toward adults and oppositional defiant disorder toward peers: Initial evidence for two separate constructs. *Psychological Assessment*, 18(4), 439.
- Türkoğlu, S., Bilgiç, A and Akça, F. O. 2015. Attention deficit hyperactivity disorder symptoms, breast-feeding and obesity in children and adolescents. *Pediatrics International* 57, 546-551 doi: 10.1111/ped.12593.
- Wamulugwa, J., Kakooza, A., Kitaka, M.S., Nalugya, J., Kaddumukasa, M, Moore, S., Sajatovic, M. and Katabira, E. 2017. Prevalence and associated factors of attention deficit hyperactivity disorder (ADHD) among Ugandan children; a cross-sectional study, *Child Adolescent Psychiatry Mental Health*, 11(18), DOI 10.1186/s13034-017-0155-6
