

ASSESSMENT ON THE EFFECT OF EXECUTIVE FUNCTIONING DISORDERS IN VULNERABILITY TO DEPRESSION AMONG ADOLESCENTS IN SECONDARY SCHOOLS IN MERU COUNTY, KENYA

^{1*} **Kiambarua, Kenneth Gitiye**

*Corresponding Author's E-mail: kengitiye@gmail.com

²**Dr. Peter Mwiti, PhD**

Supervisor

School of Education and Social Sciences

³**Dr. Esther Thuba, PhD**

Supervisor

School of Education and Social Sciences

^{1,2,3}Kenya Methodist University

ABSTRACT

Purpose: Assessment on the effect of executive functioning disorders in vulnerability to depression among adolescents in secondary schools in Meru County, Kenya.

Methodology: The study adopted descriptive research design to gather both qualitative and quantitative data. Secondary schools were sampled using proportionate stratified sampling method to obtain 27 secondary schools in Meru County. The principals/deputy principals and counseling teachers were interviewed. Mathematics and English teachers answered a questionnaire, while the students were assessed using depression tool. Pretesting of data collecting instruments was done in 3 schools in the neighboring Tharaka Nithi County; Ikuu girls' secondary school, Chuka boys' high school and Ndagani mixed day secondary school. Data was analyzed using descriptive statistics such as frequency, percentage and median. Additionally, inferential statistics such as linear regression and multiple regressions inclusive of regression coefficients were established. SPSS was used to analyze the data presented. The findings were presented using tables, explanations, and diagrams. Content analysis method was used for qualitative analysis purposes.

Results: The questionnaires results indicated that majority, 128 (89%) of Mathematics and English teachers strongly agreed that the school was keen on ensuring that corporal punishment is not administered hence alternative ways so as to reduce mental effect such as cognitive deficits

(mean of 5). Nevertheless, 68(47%) strongly disagreed and 38(26%) disagreed that there were systems in school for students to speak out when they are undergoing physical and mental torture (mean of 2). On the interview results, principals and counseling teachers indicated that students with executive functions disorder got bullied, had low self-esteem, indiscipline issues such as fighting the students laughing at their weaknesses, and got low grades. The intervention measures implemented by the school included observing and singling out cases. The R value was 0.943 and the R-square was 0.890. This meant that executive functioning disorder had an 89% influence on vulnerability to depression whereas 11% was as a result of other factors not addressed in the study. The significance value was 0.000 hence below 0.05. This made the study reject the null hypothesis that executive functioning deficits have no statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya.

Conclusion: Though there were awareness campaigns on mental issues as a result of drug and substance abuse, there still lacked awareness made on mental issues due to cognitive deficits making students unable to multitask, manage time and lack attention. This lack of awareness was caused due to unavailability of systems and communication channels that students suffering from cognitive deficits could speak up on to get help.

Recommendations: The study recommends that on executive function disorder, the management of the school should beef up on creating awareness of how mental issues can lead to drug and substance abuse by the students. There should be provision of finances by the ministry of education to schools to be able to have print media such as posters, magazines, newsletters and pamphlets on what executive function disorders are, how can one tell they suffer from them and the various treatment methods in place.

Keywords: *Executive Functioning Disorders, Vulnerability to Depression, Cognitive Deficits, Adolescents, Mental Health.*

1.0 INTRODUCTION

Depression is a serious mental illness that negatively affects how you feel, the way you think and how you act (American Psychiatric Association [APA], 2013). Depression has a negative influence whereby the thinking capacity of the depressed person is altered. Vulnerability to depression leads a person to being so much prone to falling into immense sadness. People get depressed due to many factors which include abuse, conflict, death of a loved one, poverty, sicknesses and other personal issues (World Health Organization [WHO], 2020). However, when depression is major and prolonged, it may mean that it is as a result of executive functioning disorders (Green et al., 2020).

WHO declared that young people's mental health is a key area of concern to which professionals and policy-makers must direct their attention (WHO, 2005). Globally, Blad (2019) pointed out that there has been a rise of 4.5 percent in depression cases in America from 8.7 percent at a span of 12 years. These are adolescents aged 12-17 years. Other studies such as Cuijpers et al. (2018) show that indeed depression has been present in adolescents over the years and it has been escalated by the changing times and in the 21st century.

From a regional perspective, Africa suffers from high teenage pregnancies and high school drop-out rates due to morality problems mostly associated with mental health challenges. Fisher et al. (2017) plummets into the argument by stating that there has been an increased conflict between the depressed adolescents and the people around them since they are unable to control their emotions; self-inflicted pain whereby the adolescent cut and burn to punish themselves; poor concentration in class, drug and substance abuse and risky sexual behaviors due to mental health related challenges.

Locally in Kenya, Maina et al. (2020) expressed that Kenyan adolescent are highly predisposed to depression and other mental health related challenges. Depression among adolescents has been caused by peer discrimination; conflicts as a result of bullying; low self-esteem; and increased drug and substances abuse. Most of vulnerability to depression issues have been as a results of executive functioning disorder which is defined as a mental condition that affects how a person performs various basic roles that enable someone to achieve their objectives in life. In an adolescent life, executive functioning disorders could be portrayed as the inability to interact, write, speak, read fluently. multitask, poor time management, low memory, lack of emotional control, poor organizational skills, inefficient processing information, and low attention (Amariglio et al., 2018).

1.2 Statement of the Problem

Adolescence is a period where rapid emotional and physical growth is expected to take place. As adolescents are transitioning to adulthood, they are expected to perform various functions and tasks which should coordinate well with their mental capabilities and developmental stage in life

(UNICEF, 2017). They should be able to have learnt how to read, write, speak fluently, interact with their peers and deal with intra and inter personal challenges in a healthy way (UNICEF, 2017). Adolescents should be able to make new and relate well with friends, communicate well with different people; coordinate and blend classwork with other aspects of their life like families and social life.

However, Kenyan adolescents have experienced high rates of depression portrayed through student's unrest, high teenage pregnancies, poor academic performance, drug and substance abuse, social withdrawals, suicidal ideation and suicide cases among school going students (MOH, 2021). The main cause of the depression has been extreme issues related to executive functioning disorders such as when adolescents have been unable to speak fluently, write clearly, low memory hence inefficiency of processing information. These issues have seen to it that adolescents get bullied and branded names like mentally unfit to be in school hence falling into depression

Poor strategies in addressing both the cause and consequences of the disorders have led to more adolescents getting depressed to a point that they drop from school, harm themselves or other people, destroy property, and engage in criminal activities as acts of revenge and ways of dealing with so much spent up emotions and pressure.

1.3 Purpose of the Study

Assessment on the effect of executive functioning disorders in vulnerability to depression among adolescents in secondary schools in Meru County, Kenya.

1.4 Hypothesis

H01: Executive functioning disorders have no statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

Meta-cognitive Theory (MCT) was first developed by Flavell (1979.) MCT postulates that human beings have their own capabilities to use numerous cognitive skills when undertaking various tasks ahead of them. This means that people easily control their thought processes so as to fit perfectly well with the roles they intend to perform. Controlling the thoughts borrow a lot from experiences, knowledge, objectives and approaches that a person possesses. Monitoring of one's thinking is affected by past experiences towards interaction with the specific event, a thing or someone. The kind of knowledge one possesses enable them to use this information towards implementing their thoughts in a careful and concise manner. The goals/objectives a person intends to achieve could cause them to think and act in a way that promotes them towards attaining

their goals. Additionally, the kind of approaches that a person intends to use in an event greatly affects their thinking which is replicated in deeds.

2.2 Empirical Review

A report by Center for Brain Health [CBH] (2020) explored how depressive mood could lead to short-term memory loss among the youth in America. The study noted that it was normal for someone to become forgetful as they age but at youthful stages, it was not normal but a cognitive problem. As per CBH (2020), the collected data was from 157 undergraduate students of which 97 did not have any symptoms of depression but the rest had. The respondents were supposed to answer questionnaires by indicating where true or false and after which they were to memorize some few numbers. It was discovered that the respondents who were depressed tended to be forgetful hence had a temporary loss of memory. This meant that when someone is depressed, they tend to be 12 percent mentally forgetful hence low concentration, low performance and strained relationships in their lives. This study however did not investigate the vulnerabilities to depression among these students. This created a gap of the current study to investigate some of the causes of depression among adolescents in Meru County secondary schools.

Harrison et al. (2021) examined the mental health challenges adolescents face when coping with stress and their mental strengths in South Africa. The study revealed that adolescents in South Africa faced various eco-social challenges that pushed them towards being stressed. According to Harrison et al. (2021), there was a tendency of poor attention, emotional control and not organized. However, social support from their acquaintances, high self-esteem and pliability contributed a lot towards stable mental health. Therefore, Harrison et al. (2021) recommended that there should be more intervention strategies to reduce lack and poverty induced mental distress.

Locally, Wambua et al. (2020) analyzed the procedures and results of adolescent and adolescent centered psychotherapies currently in place in Kenya. Wambua et al. (2020) acknowledged that there was an increasing concern for psychotherapies among adolescents and adolescent in Kenya. This was because; in as much as there were few services that treat cognitive disorders in Kenya, their effectiveness was not known. Cognitive disorder was a more complex problem that takes time to improve unlike other illnesses that take short-time. The time required to correct mental disorder depended entirely on the patient's willingness and the stage of disorder into which help was accorded at. Willingness of a patient was greatly hampered with the level of depression they were going through such as neglect from close relatives which may lower their self-esteem. Therefore, Wambua et al. (2020) investigated the psychotherapies offered at Kenyatta National Hospital (KNH) and used mixture of methods depending on several factors such as treatment results and psychotherapy offered at different stages of the treatment. In relation to this, Wambua et al. (2020) concluded that the area was still underdeveloped, poor specialized services and supporting resources, lack of trained staff and lack of policies. There was a gap in establishing

what was known as effectiveness in psychotherapies, what was offered in psychotherapies and the consumer experiences in psychotherapies.

3.0 RESEARCH METHODOLOGY

The study adopted descriptive research design to gather both qualitative and quantitative data. Secondary schools were sampled using proportionate stratified sampling method to obtain 27 secondary schools in Meru County. The respondents were 27 principals/deputy principals, 176 English and Mathematics teachers and 27 guidance and counselling teachers who were selected using simple random method. There was use of inclusion and exclusion sampling method to select 11 students in each secondary school in all 27 schools. The principals/deputy principals and counseling teachers were interviewed. Mathematics and English teachers answered a questionnaire, while the students were assessed using depression tool.

Pretesting of data collecting instruments was done in 3 schools in the neighboring Tharaka Nithi County; Ikuu girls' secondary school, Chuka boys' high school and Ndagani mixed day secondary school. Data was analyzed using descriptive statistics such as frequency, percentage and median. Additionally, inferential statistics such as linear regression and multiple regressions inclusive of regression coefficients were established. SPSS was used to analyze the data presented. The findings were presented using tables. Content analysis method was used for qualitative analysis purposes. Thereafter all alike responses were identified in special themes. These themes were further be used in generating a report.

4.0 RESULTS

4.1 Reliability Statistics

The study conducted a pre-test study where 3 deputy principals and 3 guidance and counseling teachers who were interviewed while 9 mathematics teachers and 9 English language teachers answered questionnaires. Further on, 10 students were assessed through MoCA test and answered respective questionnaires. The results of the pre-test study are indicated on Table 1.

Table 1: Reliability Results

Instrument	Cronbach's Alpha	N of Items
Interview	0.827	6
Teachers' Questionnaire	0.849	18
MoCA Test	0.938	10
Student Questionnaire	0.871	10

Table 1 shows that the interview guide had a Cronbach Alpha value of 0.827; teachers' questionnaires had 0.849; MoCA test had 0.938 and Student questionnaire had 0.871. From the results, it was factual that all instruments had Cronbach value of above 0.8 hence were reliable.

4.2 Response Rate

The study was able to collect various forms of data from 22 principals, 70 mathematics teachers, 74 English teachers 25 guidance and counseling teachers, 237 students. An overall total of 428 which is 81% response rate. The interview responses from the principals and counseling teachers were 47 which is 87% response rate. The questionnaire responses from mathematics and English were 144 which is (82%) response rate. The questionnaire from students' responses were 237 which is (80%) response rate. The results are indicated on Table 2.

Table 2: Response Rate

	Respondents	Sampled Size	Responded	Percentage Responses
Interviews	Principals	22	22	
	Guidance and Counseling Teachers	27	25	
	Total	54	47	87%
Teachers Questionnaires	Mathematics Teachers	86	70	
	E English Teachers	90	74	
	Total	176	144	82%
Students Questionnaire		297	237	80%
Total Respondents		527	428	81%

4.3 Descriptive Statistics of Vulnerability to Depression

Vulnerability to Depression was the dependent variable. It had elements such as low academic performance, adolescent pregnancies, absenteeism, low self-esteem, loneliness and withdrawal, school drop-out, engagement in risk behaviors, and suicidal ideation. The study interviewed, administered different questionnaires and conducted MoCA test to different sampled population.

The first questionnaire which was answered by English and Mathematics teachers had five-point Ordinal Likert Scale of between 1-5. Where; 1-strongly disagree; 2- disagree; 3-neutral; 4- agree and 5- strongly agree. The outcome is shown on Table 3.

Table 3: Descriptive Statistics of Financial Performance

Statements	1	2	3	4	5	Median
N=144						
Loss of memory hampers activities	1(1%)	3(2%)	0(0%)	15(10%)	125 (87%)	5.00
Stammering causes depression to students	1(1%)	21(15%)	0(0%)	45(31%)	77 (53%)	5.00
Reading disorders affects mood of the students	6(4%)	64(45%)	0(0%)	74(51%)	0(0%)	4.00
Mathematics learning disorder leads to low self-esteem	2(1%)	3(2%)	0(0%)	123 (85%)	16 (12%)	4.00
Writing disorders causes	25(17%)	21(14%)	10(7%)	33(24%)	55 (38%)	4.00

students feel
 unaccomplish
 ed

Depression awareness	40(28%)	44(31%)	0(0%)	24(16%)	36 (25%)	2.00
----------------------	---------	---------	-------	---------	-------------	-------------

Table 3 indicates that majority 125(87%) of Mathematics and English teachers strongly agreed that temporary loss of memory causes students not to perform their normal daily activities (median 5.0). Nevertheless, 44(28%) strongly disagreed and 44(31%) disagreed that their schools had raised awareness on how students could know their fellow students are depressed. This meant that in most schools, depression is still not a well-known topic. Schools could have acquaintance to the term but do not articulately understand how to identify a depression case. In the case of the students, it becomes even more challenging since most of them cannot see obvious shrugs hence generally thinking that depressed students are moody. Cuijpers et al. (2018) also argued that during most psychotherapies, the families of depressed person come to reality that they thought they knew what depression was but in real sense they did not.

The study also interviewed various respondents such as principals and counseling teachers who were named as 1 to 47. The first question inquired on the measures put in place to equip students who may have gotten temporary loss of memory due to abuse of drugs hence unable to read and write examination answers. The principals and counseling teachers indicated that they had measures such as frequent counseling sessions; motivational talks from peers and other teachers to avoid drug and substance abuse; and encouragement of the students to join guidance and counseling clubs. Based on the findings, it was clear that drug and substance abuse was still a major threat to many schools. In worsening the situation, it was noted that the abuse of drugs could lead to mental blackout and memory loss though for a short time.

The second question inquired how depression among students affected their performance. The principals and counseling teachers indicated that depression caused decline low academic grades, withdrawal from cocurricular activities such as games, and isolation from general interactions with other students' such as not attending study groups.

4.4 Student Depression Assessment Tool

The first statement on depression tool examined the students' sentiments on low academic performance. The outcome is shown on Table 4.

Table 4: Student Depression Assessment Tool

	Frequency	Percent	Cumulative Percent
I find a challenge in keeping up with high grades in my studies	27	11	11
Hard examination makes me fail	77	33	44
I do not understand a lot of things taught in class	77	33	77
I am not worried when I fail exams	56	23	100
Total	237	100	

According to Table 4, it was clear that most students 77(33%) complained that hard examination made them fail and that they did not understand a lot of things taught in class. This meant that as a result of low understanding due to cognitive challenges various subjects taught by their teachers, they experienced a hard time during examinations since the exams were set based on what they had learnt hence ending up performing poorly.

4.5 Descriptive Statistics of Executive Functioning Disorder

Executive Functioning Disorder was an independent variable. It had elements such as multitasking, time management, memory, emotional control, organizational skills, processing information and paying attention. The study administered questionnaires and interviewed respondents. The questionnaire had five-point Ordinal Likert Scale of between 1-5. Where; 1- strongly disagree; 2- disagree; 3-neutral; 4- agree and 5- strongly agree. The outcome is shown on Table 5.

Table 5: Executive Functioning Disorder in Vulnerability to Depression

Statements	1	2	3	4	5	Median
N=144						
Alternatives form of punishments considered	0(0%)	0(0%)	0(0%)	16(11%)	128 (89%)	5.00
Awareness in school by the students on the mental effect of drug abuse	0(0%)	10(7%)	2(1%)	16(11%)	116 (81%)	5.00
Writing is encouraged for purposes of remembering	2(1%)	0(0%)	0(0%)	131 (91%)	11(8%)	4.00
Systems in school for students to speak out	68(47%)	38(26%)	27(19%)	10(7%)	1(1%)	2.00
Campaigns on various mental health issues	73(51%)	53(37%)	18(12%)	0(0%)	0(0%)	1.00

Students have an encouraging attitude	0(0%)	23(16%)	0(0%)	60(42%)	61 (42%)	4.00
---------------------------------------	-------	---------	-------	---------	-------------	-------------

According to Table 5, 128 (89%) of Mathematics and English teachers strongly agreed that the school was keen on ensuring that corporal punishment is not administered hence alternative ways so as to reduce mental effect such as cognitive deficits (mean of 5). Nevertheless, 68(47%) strongly disagreed and 38(26%) disagreed that there were systems in school for students to speak out when they are undergoing physical and mental torture (mean of 2). Additionally, 73(51%) strongly disagreed and 53 (37%) disagreed that there were campaigns conducted in school to educate students on various mental health issues such as poor multitasking, poor time management and lack of attention.

The results indicate that though there were awareness campaigns on mental issues as a result of drug and substance abuse, there still lacked awareness made on mental issues due to cognitive deficits making students unable to multitask, manage time and lack attention. This lack of awareness was caused due to unavailability of systems and communication channels that students suffering from cognitive deficits could speak up on to get help. The findings relate with Mwoma (2017) on how adolescents who had special needs underwent through their education system. In this regard, the study compared adolescents who were extremely affected hence required special schools and the ones who were less affected.

The study also interviewed various respondents such as principals and counseling teachers who were named as 1 to 47. The first question inquired on the challenges that had been experienced by students who suffered from various executive functions such as poor multitasking, poor time management, low memory poor emotional control, poor organizational skills, poor processing information and low attentiveness. The principals and counseling teachers indicated that such students get bullied, have low self-esteem, have indiscipline issues such as fighting the students laughing at their weaknesses, and get low grades.

The second question inquired on the ways through which secondary school used to treat depression cases linked to executive functions. The principals and counseling teachers indicated that they observe and single out cases. Later, the offer guidance and counseling as a way of verifying that indeed it's a true case of depression due to executive functions. They begin intervention measures such as extra tuition and assignments. If the intervention measures are not working, the student is linked with external psychologist who may recommend medical treatment after further assessment.

4.6 Model Summary of Executive Functioning Disorder

The study conducted model summary to ascertain the percentage level of influence that executive functioning disorder had on vulnerability to depression. The outcome is shown on Table 6.

Table 6: Model Summary of Executive Functioning Disorder in Vulnerability to Depression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943 ^a	.890	.831	2.85403

a. Predictors: (Constant), Executive Functioning Disorder

The results on Table 6 indicate that the R value was 0.943 and the R-square was 0.890. This meant that executive functioning disorder had an 89% influence on vulnerability to depression whereas 11% was as a result of other factors not addressed in the study. These results show that executive functioning disorder is a very integral part of cognitive deficit and which could easily lead to depression. It was noticed that executive function disorder could be easily triggered by mocking and interfering with personal spaces.

4.7 ANOVA of Executive Functioning Disorder

The study's null hypothesis indicated that executive functioning deficits have no statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya. To make a decision to accept or reject the hypothesis, the study conducted ANOVA analysis. The outcome is shown on Table 7.

Table 7: ANOVA of Executive Functioning Disorder in Vulnerability to Depression

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	113.090	1	113.090	13.884	.000 ^b
1	Residual	1156.660	365	8.145		
	Total	1269.750	366			

a. Dependent Variable: Vulnerability to Depression

b. Predictors: (Constant), Executive Functioning Disorder

The significance value of Table 7 was 0.000 hence below 0.05. This made the study reject the null hypothesis that executive functioning deficits have no statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya. Rejection of the hypothesis is also similar to saying that executive functioning deficits have a statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya. What this meant was that when a student has a mental condition that affects how they perform various basic roles that enable them to achieve their objectives in life, it may increase the vulnerability to depression.

4.8 Regression Coefficients of Executive Functioning Disorders in Vulnerability to Depression

The study conducted regression coefficient to answer the study’s model. The outcome is shown on Table 8.

Table 8: Regression Coefficients of Cognitive Deficits in Vulnerability to Depression

Model	Unstandardized Coefficients		Standardize d Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	12.524	2.637		4.749	.000
1 Executive Functioning Disorder	.248	.158	.207	1.569	.009

a. Dependent Variable: Vulnerability to Depression

According to Table 8, the coefficients of the model include: Vulnerability to depression= 12.524C+ 0.248 X1. That is, constant value is 12.524; executive functioning disorder is 0.248. The p-value of executive functioning disorder was 0.009. The results indicate that executive function disorders should be rectified as soon as possible since they pose a higher challenge towards exposing the adolescents to depression. Any traits that are noticed on poor multitasking whereby students hardly keep track of what is expected of them and lack of management of time to enable them know where to be at what time, should not be taken for granted.

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of the findings

The questionnaires results indicated that majority, 128 (89%) of Mathematics and English teachers strongly agreed that the school was keen on ensuring that corporal punishment is not administered hence alternative ways so as to reduce mental effect such as cognitive deficits (mean of 5). Nevertheless, 68(47%) strongly disagreed and 38(26%) disagreed that there were systems in school for students to speak out when they are undergoing physical and mental torture (mean of 2). On the interview results, principals and counseling teachers indicated that students with executive functions disorder got bullied, had low self-esteem, indiscipline issues such as fighting the students laughing at their weaknesses, and got low grades. The intervention measures implemented by the school included observing and singling out cases. The R value was 0.943 and the R-square was 0.890. This meant that executive functioning disorder had an 89% influence on vulnerability to depression whereas 11% was as a result of other factors not addressed in the study. The significance value was 0.000 hence below 0.05. This made the study reject the null hypothesis that executive functioning deficits have no statistically significant effect on vulnerability to depression among adolescents in secondary school in Meru County, Kenya.

5.2 Conclusion

The conclusion made on executive function disorder was that though there were awareness campaigns on mental issues as a result of drug and substance abuse, there still lacked awareness made on mental issues due to cognitive deficits making students unable to multitask, manage time and lack attention. This lack of awareness was caused due to unavailability of systems and communication channels that students suffering from cognitive deficits could speak up on to get help.

5.3 Recommendations and Contributions of the Study

The study recommends that on executive function disorder, the management of the school should beef up on creating awareness of how mental issues can lead to drug and substance abuse by the students. There should be provision of finances by the ministry of education to schools to be able to have print media such as posters, magazines, newsletters and pamphlets on what executive function disorders are, how can one tell they suffer from them and the various treatment methods in place.

6.0 REFERENCES

- Amariglio, R.E., Buckley, R.F., Mormino, E.C., Marshall, G.A., Johnson, K.A., Rentz, D.M., & Sperling, R.A. (2018). Amyloid-associated increases in longitudinal report of subjective cognitive complaints. *Alzheimers Dement*, 6(4), 444–449.
<https://doi.org/10.1016/j.trci.2018.08.005>

- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th. Ed.). APA
- Blad, E. (2019). *Student well-being: Schools grapple with student depression as data show problem worsening*. <https://www.edweek.org/leadership/schools-grapple-with-student-depression-as-data-show-problem-worsening/2019/03>
- Center for Brain Health (2020). Effect of depressive thoughts on memory. *Cognition and Emotions*, 8(5), 1-10. <https://brainhealth.utdallas.edu/study-quantifies-the-effect-of-depressive-thoughts-on-memory/>
- Cuijpers, P., Karyotaki, E., Reijnders, M., Huibers, M.J. (2018). Who benefits from psychotherapies for adult depression? A meta-analytic update of the evidence. *Cognitive Behavior Therapy*, 47(2), 91-106. <https://doi.org/10.1080/16506073.2017.1420098>
- Fisher, J., Cabral de Mello, M., Patel, V., Rahman, A., Tran, T., & Holton, S. (2017). Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: A systematic review. *Bull World Health Organization*, 90(6), 139–149. <http://www.who.int/entity/bulletin/volumes/90/2/11-091850.pdf>
- Flavell JH (1979) Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(1), 906-911. [http://jwilson.coe.uga.edu/EMAT7050/Students/Wilson/Flavell%20\(1979\).pdf](http://jwilson.coe.uga.edu/EMAT7050/Students/Wilson/Flavell%20(1979).pdf)
- Harrison, C., Loxton, H., & Somhlaba, N. Z. (2021). Stress and coping: Considering the influence of psychological strengths on the mental health of at-risk South African adolescents. *Adolescent Care in Practice*, 27(1), 1-12. 72-86. <https://doi.org/10.1080/13575279.2019.1604492>
- Green, E.P., Lai, Y., Pearson, N., Rajasekharan, S., Rauws, M., Joerin, A., Kwobah, E., Musyimi, C., Jones, R. M., Bhat, C., Mulinge, A., & Puffer, E.S. (2020). Expanding access to perinatal depression treatment in Kenya through automated psychological support: Development and usability study *JMIR Formative Research*, 4(10), 78-95 <https://doi.org/10.2196/17895>
- Maina, B.W., Orindi, B.O., Osindo, J., Ziraba, A.K. (2020). Depressive symptoms as predictors of sexual experiences among very young adolescent girls in slum communities in Nairobi, Kenya. *International Journal of Adolescence and Youth*, 25(1), 836-848. <https://doi.org/10.1080/02673843.2020.1756861>
- Ministry of Education (2021). *Press statement for release of the 2020 KCSE examination results by the cabinet secretary, ministry of education, Prof. George a. O. Magoha, Egh, at the*

- KNEC Mitihani house, Dennis Pritt Road, Nairobi, on May 10, 2021.*
https://www.education.go.ke/images/cs_magoha_2020_kcse_results_speech-final.pdf
- Mwoma, T. (2017). Education for adolescents with special needs in Kenya: A review of related literature. *Journal of Education and Practice*, 8(28), 188-200.
<https://www.iiste.org/Journals/index.php/JEP/article/download/39246/40353>
- United Nations Adolescents Fund (2017). *Situation analysis of adolescents and women in Kenya*,
<https://www.unicef.org/kenya/media/136/file/SITAN-report-2017-pdf.pdf>
- Wambua, G. N., Kumar, M., Falkenström, F., & Cuijpers, P. (2020). Process and outcome of adolescent psychotherapies offered in Kenya: A mixed methods study protocol on improving adolescent mental health. *BMC psychiatry*, 20(1), 263-273.
<https://doi.org/10.1186/s12838-020-02611-2>
- World Health Organization (2020). *Adolescent health and development*.
<https://www.who.int/westernpacific/news/q-a-detail/adolescent-health-and-development>