

Screening and Interventions for Depression among Adolescents in Secondary Schools in Kakamega County, Kenya

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Abstract: *Depression is the third leading public health concern and second leading cause of death for adolescents. Screening strategies and interventions for children have been documented but are least used in schools in Kakamega county. This study examined the depression screening strategies and interventions used in secondary schools in Kakamega County, Kenya among the adolescents. The study used a descriptive design. Mixed methods of data collection were used. The Hopelessness theory of Depression was the theoretical basis of the study. A sociodemographic questionnaire was used for the adolescents. A questionnaire for the guidance and counseling teachers and key informant guides for the education officers and medical officers were used for data collection. Statistical Package for Social Sciences Version 27 was used for analysis of quantitative data. Qualitative data was analyzed thematically. The findings showed that most of the standardized psychometric screening tools are not used in schools in Kakamega County, Kenya. There was reliance on observation of symptoms by teachers, peers and school health workers the method to screen for depression among adolescents. Guidance and counseling and life skills are the common interventions. The study recommends frequent screening of depression among adolescents using the standard psychometric tools and use of positive psychology interventions.*

Keywords: Adolescents, Depression, Screening, Interventions, Secondary Schools

1. Introduction

Depression is the third leading public health concern and second leading cause of death for adolescents (WHO, 2021). For adolescents, it has triple negative effects going beyond social relations, school performance and poor health (Awadalla *et al.*, 2020; Weersing *et al.*, 2006). Adolescent depression if not addressed increases risk for hospital visits and admissions (Weersing *et al.*, 2006). It also contributes to recurrent depression, psycho - social deterioration, alcohol and substance abuse, as well as increased antisocial behaviors and teenage pregnancies (Garber, 2006). Because of depression's recurrent nature and its association with poor academic performance, functional impairment and problematic relationships with parents, siblings and peers, it important to have accurate diagnosis (Jiang *et al.*, 2021).

Screening strategies for children are documented but are least used in schools (APA, 2013). Adults have more diagnosis tools than younger populations. Diagnosis of depression among the younger populations is quite challenging. This is based on the fact that the symptoms of this disease present among adults. Often, comorbidities affect diagnosis in children as well as in adolescents.

Varied medical interview - based tools as well as laboratory - based ways are in place for depression screening. Many other new formulations are in the offing, with each of them showing different degrees of improvement and strength (Smith *et al.*, 2013). Among children and adolescents, the various self - reporting tools exist. They include the Behavior Assessment System for Children (BASC), which is used for all emotional and behavioral problems for people between 2 to 21 years (Reynolds & Kamphaus, 2015). BASC may be administered to teachers, parents or the person so as to assess behavior.

Children's Depression Inventory (CDI) is a alteration of the Beck Depression Inventory for grown - ups. The CDI measures depression severeness in children and adolescents 7 to 17 years old (Sun & Wang, 2015). The Children's Depression Rating Scale (CDRS) was earlier fashioned to measuring changes in depressive symptoms in children ages 6 to 12. CDRS' validity and reliability have further been shown in the adolescent population (Mayes *et al.*, 2010).

The Child Behavior Check list (CBCL) is a standardized tool configured for the younger populations of ages between 6 and 18 years. This tool is mete out to parents to get responses on the status of their children ability and behavioral difficulties. Its takes five to ten minutes for the respondents to complete the CBCL (Kariuki *et al.*, 2016). Depression Self - Rating Scale for Children (DSRS), Reynolds Adolescent Depression Scale (RADSD), Mood and Feelings Questionnaire (MFQ), and Short Mood and Feelings Questionnaire (SMFQ), the Revised Child Anxiety and Depression Scale (RCADS) and among others. The Kutcher Adolescent Depression Scale (KADS) was developed by a psychiatrist (Stan Kutcher) for a need of an efficient and reliable tests for adolescents. The KADS has got three versions; those of 16 items, for 11 items and one for six items (Kutcher, 2003).

Other screening tools that may span across ages entail the Centre for Epidemiological Studies Depression Scale (CES - D), although there is a version for Children (CES - DC). The Hamilton Rating Scale for Depression (HAM - D), may be used by health workers used to screen for depression among patients prior, during or subsequently after treatment (Hamilton, 1979). The Montgomery - Åsberg Depression Rating Scale (MADRS) has ten items. The tool measures intensity of depression among persons of 18 years and above. The items on MADRS are measured on a 7 - point

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scale (Montgomery & Asberg, 1979). The other tool that cuts across age is the Social Problem - Solving Inventory - Revised (SPSI - RTM). This tool is used to screen for social problem - solving strengths and weaknesses among persons of 13 years old and above (D'Zurilla & Nezu, 1990). This study focused on the tools for children and adolescents as well as those that span across ages.

Timely interventions in depression greatly decreases the prevalence and rigor of depression (WHO, 2017). Electro - convulsive therapy, Antidepressants and Trans - cranial Magnetic Stimulation (TMS) are the clinical strategies recommended for depression management (WHO, 2017). Cognitive Behavioral Therapy (CBT), Interpersonal Therapy (IPT), Psycho - dynamic Therapy (PDT) and the Well Being Therapy are some of the psychotherapies recommended (WHO, 2021). Others include provision of parental support, addressing parental mental disorders, family education and addressing adolescent comorbidity (Daly, 2022). Recommendations from a systematic review point to proper on nutrition, music, exercise, sleep and hygiene as other management approaches to adolescent depression (Das *et al.*, 2016). The review shows that majority of these interventions are implemented in high income countries (Das *et al.*, 2016). Some other interventions include supportive counseling, Guidance and Counseling (G&C) and Life Skills Education. In Kenyan secondary schools, the most popular management strategies for majority of psychological problems are (Wambu & Wickman, 2016) and LSE (Mathenge 2018; Wachira 2010). Adolescents are likely to have low remission and relapses if proper intervention is not chosen.

2. Materials and Methods

The study was carried out among adolescents in secondary schools in Kakamega County of Western Kenya. A descriptive design was adopted. Mixed methods of data collection were used. Multi - stage cluster sampling was used to select schools. From the clusters, 45 schools were then randomly selected. For the sample size of the adolescents, a G - power analysis was used to ascertain the sample size (n), computed as a function of the required power level ($1 - \beta$) which was taken as 80%, the pre - specified significance level ($\alpha=0.05$), and a population effect size of 0.4 (22). Based on this analysis, the study recruited 448 adolescents of 15 - 19 years, through simple random sampling. An adolescent sociodemographic questionnaire, a teacher's questionnaire and key informant guides further used for data collection. Validity was ensured through a pilot study conducted in the nearby County. The pilot study was used to assess the clarity of the wordings in the data collections tools. Written assent was also an inclusion criteria for the adolescents below 18 and consent from guardians. Adolescents above 18 consented for themselves in written.

Table 1: Target population, Sample population & Sampling methods

Respondents	Target population	Sample population	Sampling method
Schools	442	45	Multi - stage cluster
Adolescents	180, 851	448	Simple random
Sub County Education Directors	12	12	Purposive
Sub - County Medical Officers	12	12	Purposive

Statistical Analysis

Statistical Package for Social Sciences (SPSS) version 27 was used for analysis of the quantitative data. Data from the key informant guides was analyzed thematically. Frequency tables and percentages were used to display the screening strategies and interventions. Verbatim quotes were used to present findings of the qualitative data.

3. Results

Response Rate

The response rate of the study was 92% for the adolescents and 100% for the guidance and counseling teachers, sub county education and medical officers. The adolescent response rate was attributed to the 37 students who for ethical reasons were unwilling to participate in the study.

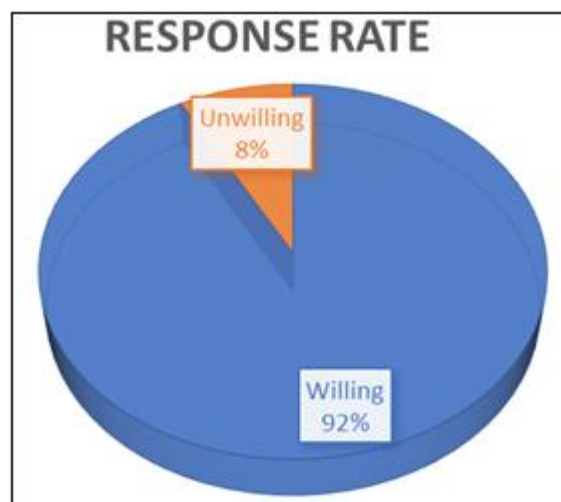


Figure 1: Response Rate

Screening Strategies for Depression among Adolescents

Adolescents, as well as the guidance and counseling teachers were given a list of depression screening tools and were asked to indicate those used in their schools. Findings from the adolescents show that most schools depend on referral by teachers ($n=411$, 87%), referral by peers ($n=411$, 73%) and observations by school nurses and teachers ($n=411$, 68%). Majority of the adolescents were not familiar with the other standardized depression measuring tools available. Only 0.2% had knowledge of Beck's Depression Inventory. None of them had heard about or used the Hamilton depression rating scale, Children Depression Inventory, or the Center for Epidemiological Studies Depression Scale Depression Self - Rating Scale for Children, Reynolds Adolescent Depression Scale, Mood and Feelings Questionnaire, and Short Mood and Feelings Questionnaire, the Revised Child Anxiety and Depression Scale and the

Kutcher Adolescent Depression Scale (n=411, 100%).

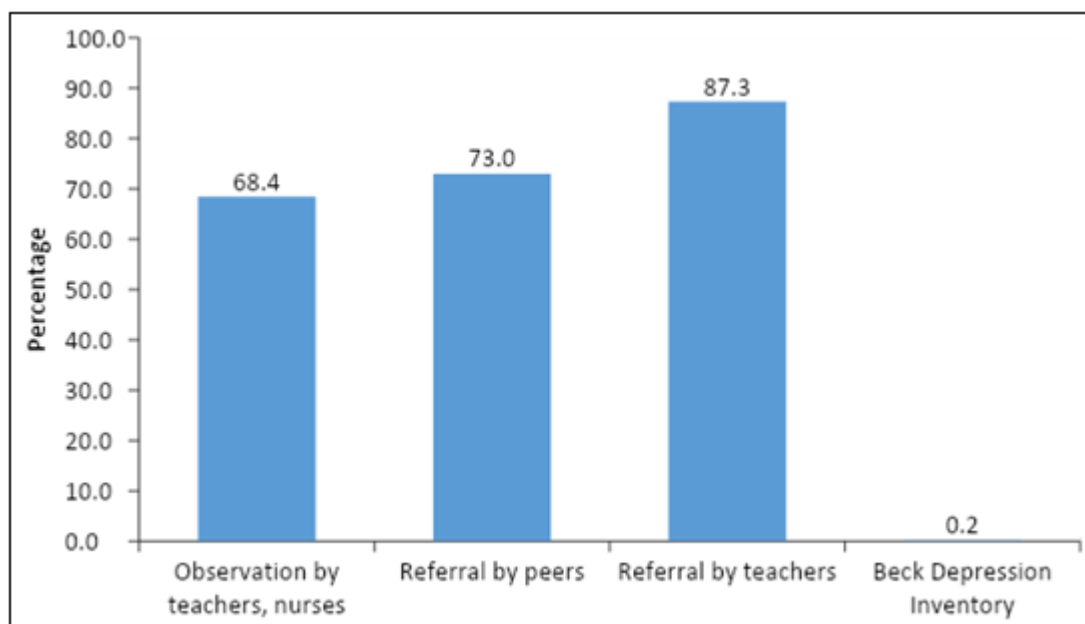


Figure 2: Strategies to Identify to Depression as per Adolescents

Findings from the guidance and counseling teachers show that most schools relied on observations made by teachers and nurses’ observation (n=44, 98%) and referral by peers and teachers (n=43, 96%). Majority of the teachers (n=45, 100%) reported being unfamiliar with the standard depression measuring tools. Findings show that they had never used or heard of the Behavior Assessment System for Children, the Hamilton Depression Rating Scale, the Center for Epidemiological Studies Depression Scale, Beck Depression Inventory, as was the case with the Children Depression Inventory. Result are presented in Table 2.

Table 2: Screening strategies for Depression by Guidance & Counseling Teachers

Variable	n	%
Observation by teachers, nurses, peers		
All of the time	44	98
Not at all	1	2
Referral by peers and teachers		
All of the time	43	96
Not at all	2	4
Behavior Assessment System for Children		
Not at all	45	100
Mood and Feelings Questionnaire		
Not at all	45	100
Reynolds Depression Rating Scale		
Not at all	45	100
Beck Depression Inventory		100
Not at all	45	100
Children Depression Inventory		
Not at all	45	100
Center for Epidemiological Studies Depression Scale		
Not at all	45	100

The findings were supported by a Key Informant who pointed out that: -

“At school level we have the G&C department which is a mandatory requirement of the education policy that every

school must have a department. Most of the times it’s just that teachers make observations. Students may also raise an alarm of the unusual behaviors of their friends. When the issue gets beyond the G&C, we refer to a higher level which is a counsellor. Some time back counselors employed were by the ministry for every county but I don’t know if that is still the case. Although it was one counsellor for the entire county, she at least provided direction on the mental issues. She was since transferred but there has been no replacement”.

Another Key Informant when asked on the strategies they use to identify depression among adolescents, they mentioned of the manifest signs as stated below: -

“For the adolescents, depression may manifest in some way that is very hard to detect. But for the young people, we check withdrawal that is they won’t engage in activities such socializing, playing with others, maybe they would also cry a lot. They may have a given posture, like they may gaze in one direction for long and most of the time they would be carried away in thoughts. You may also look at the way they are groomed. Most of the time, they are poor hygiene, right from the hair, clothes, the body itself. I also know that we conduct some tests to ascertain levels of dopamine.

The patient is mute, disheveled, dirty, their stooping posture, and at time they have suicidal thoughts or even attempted suicide”.

Interventions for Depression among Adolescents

The other objective of the study sought to identify the interventions used to manage depression among adolescents in secondary schools in Kakamega County, Kenya. The adolescents and guidance and counseling teachers were asked on the strategies implemented. Findings from the adolescents (n=411, 100%) reveal that guidance and counselling and life skills education (n= 325, 79%) are the main methods used. Findings from the adolescents further

revealed that only 1% reported on use the anti - depressants. The adolescents also reported the availability of supportive counselling (n=411, 27%). Few (n=411, 4%) noted that interpersonal therapy is done in some schools. The

respondents noted that all the therapies CBT, PDT, and WBT, were unavailable (n=411, 100%). Results are as presented in figure 3.

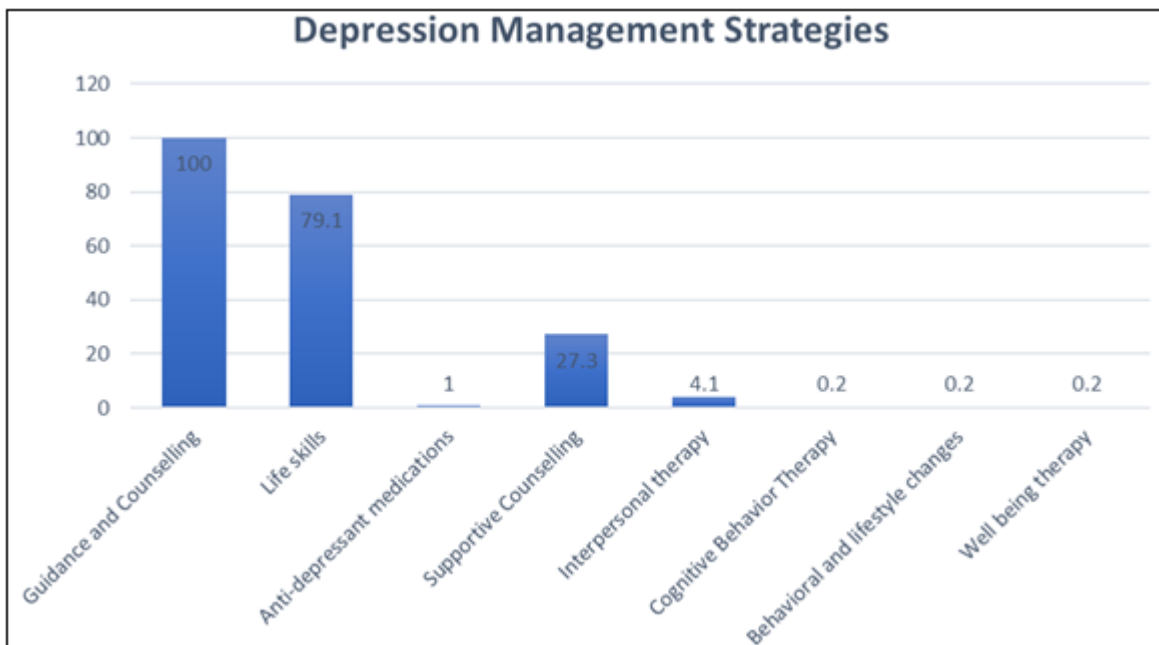


Figure 3: Strategies used in Management of Depression as per Adolescents

The findings from the G&C teachers (G&CTs) indicated that majority of schools (n=45, 100%) used guidance and counselling and life skills education (n=31, 69%). Majority of the G&CTs also reported on lack of anti - depressant medications (n=8, 18%). Most of the respondents also

reported the unavailability of supportive counselling (n=2, 4%). The G&CTs all reported that their schools were not implementing all the therapies CBT, PDT, IPT and WBT (n=45, 100%) in depression management. Percentages are presented in figure 4.

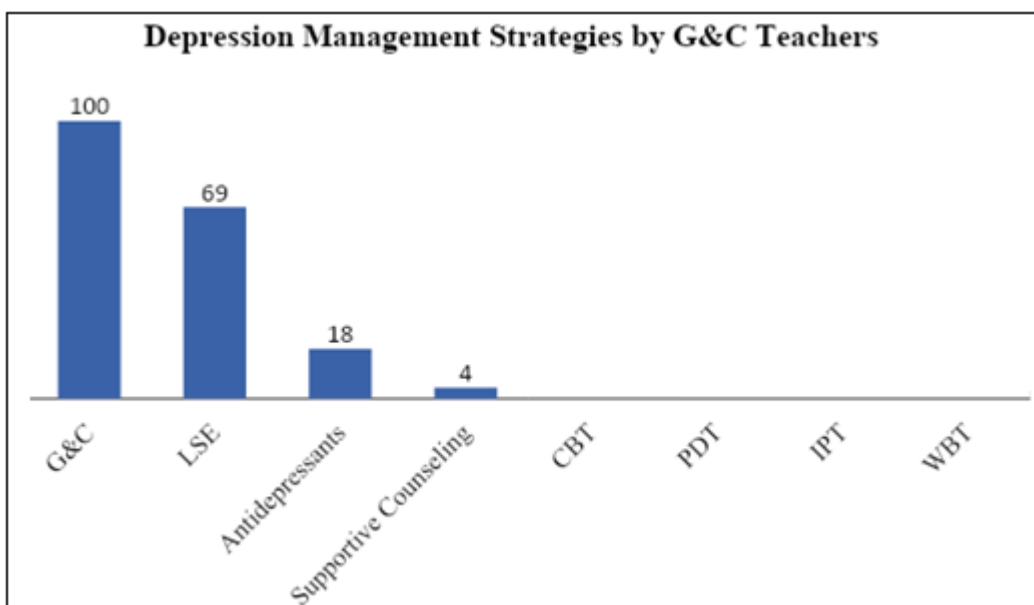


Figure 4: Depression Management Strategies by G&C Teachers

Some of the measures identified by the informants for depression management among adolescents were reported that: -

"I think we all need continuous medical education on depression management and also, we need to have some supportive materials. I think IEC materials that talk about

depression in schools, in hospitals, and even at community level. This will inform people on depression, how it presents, and what maybe done if someone is in need of help. Just like we have help lines for child abuse, we can have even a help - line with a psychological counsellor for the mental health issues. We also need to enhance and simplify the referral process".

The opinion of medical officers was that we go back to school education programs as explained in the excerpt below:

"We have the mental health clinics that run every month in what we call the community outreach services especially by the County Referral Hospital. We also used to do school outreach programs for schools. It is now impossible with COVID - 19 restrictions. It is really hard to access schools. And then of course as medical officers, we know of the drugs used in treating mental illnesses such as depression. We therefore ensure to stock the essential drugs necessary to manage depression in our referral hospital".

Another informant echoed the importance of having counselors as a strategy to be implemented to manage depression in their narration below:

"We need to have professional counselors at school level. You know even if the teacher training curriculum has a component on guidance and counselling, it is inadequate. Furthermore, the teachers have other responsibilities of which teaching is mandatory and that's what they will give priority. Some of the cases may be beyond the capacity of the G&C teachers thus needing a counsellor. Schools fail by inviting motivational speakers who are not counselors to speak to students who may be having mental issues. In schools, we also have peer counselors, who are closer to the learners and they can easily tell identify and even manage. All you have to do as a school is to identify an upright child to give direction to others. The peer counselors can escalate it to the guidance and counselling teachers".

4. Discussion

Findings showed that majority of the adolescents and G&C teachers reported the use of observation of depression symptoms, as well as referrals by peers and teachers. This supports the direction given in the theoretical framework on the key signs to check out for depression (Abramson *et al.*, 1989). G&CTs, peers and school health professionals therefore need to be trained on these signs of depression and as well be trained on the psychometric tools. These tools may give a true reflection on the situation on depression in schools in Kenya. The study findings are supported by a certain study done in Germany. The study found that the special duty of individuals working with teenagers is to be a close observer, and to help refer the affected young person for adequate services. The study also recommends the use of screening tools for psychiatric disorders in general population. Furthermore, the study recommends attention to group - specific target areas together with direct interaction between therapists and their patients (Pfennig & Klosterkötter, 2014).

Schools are perfect environments for depression screening among adolescents especially for adolescents with higher scores of depression symptoms. Schools may therefore embrace self - reporting depression screening because they are less stigmatizing unlike the community screening. The schools also give chance to identify problems before the diagnostic criteria is met. Although schools may have knowledge barriers towards screening, the impediments to execution of depression screening in learning institutions

can be managed through policy (Sekhar *et al.*, 2021). The policy method may also be customized to suit the specific needs and circumstances of the different levels of learning institutions as well as the counties. Customized policies will ensure school readiness to carry out adolescent depression screening. This may enable schools to generate a customized implementation plan. Improving access to adolescent depression screening for all students may have a positive impact on management of the condition (Sekhar *et al.*, 2021)

From the thematic analysis of the key informant interviews, it was evident that one of the methods of identifying depression was observation specific signs such as decline in withdrawal, poor hygiene, poor academic performance, social isolation, low energy level, moods swings and suicidal attempts or even suicide. This finding is supported by a study by the Delphi technique by Wahid *et al.*, (2021) showing signs manifesting depression. Although the Delphi method has no right or wrong answer, the findings help in decision making (Wahid *et al.*, 2021).

Despite the fact that schools adolescents spend much time in schools, it is worth noting that screening requires to be extended far above simple observation. Most of the adolescents demonstrated a lack of awareness on depression measurement tools like the Hamilton Depression Rating Scale, Beck Depression Inventory, Children Depression Inventory and the Center for Epidemiological Studies Depression Scale and among others used. Few G&C teachers reported knowledge of some of the tools. Adolescents and G&C teachers need to be trained on the psychometric screening, particularly the self - reporting tools so as to improve diagnosis and management. Key informants were of the idea that there be a system initiated by teacher, then meeting with a counselor for classification and assessment, and consequently a referral to mental health services. The lack of knowledge of the depression measuring tools in Kakamega County contrast those of a systematic review done by Das *et al.*, (2016) which revealed that a number of the schools in the developed countries adopted several screening tools to identify mental disorders among adolescents (Das *et al.*, 2016).

For the second objective, the findings showed that majority of the adolescents reported on availability of guidance and counselling and availability of life skills as depression interventions. Despite the usage of guidance and counseling in schools, the study found gaps as similar to those of previous studies. The challenges in the G&C ranged from ethical issues (Nyutu & Gysbers, 2007), age - gap of adolescents and teachers, in some cases the gender differences. This finding was supported by other studies which highlighted several gaps in this intervention. Despite the effectiveness of G&C in addressing social and mental challenges, the program faces multiple challenges such as lack of trained, teachers overload with class work, scarce resources and lack of cooperation from parents (Toto, 2014). The teachers in charge of G&C still have other responsibilities assigned to them. The multiple responsibilities give them precisely limited time to render effective counselling services to the learners in need. Moreover, the same teachers will be in charge of evaluating academics and it thus becomes difficult to establish that

rapport needed for G&C to take place (Kamara & Mumiakha, 2011). Another study also cited a lack of in-service training for teachers who offer G&C (Waititu, 2010) as well as a lack of clear job description for teachers offering G&C. G&C focuses on helping learners to solve an immediate crisis and thus it is temporary and problem focused. G&C is also offered at separate times such as at break time, games time and often times is a less scheduled activity. Besides, the program focuses more on girls as they are presumed to suffer from pubertal symptoms more than boys (Wango, 2020).

Although the Kenyan policy proposes the use of Life skills education, not all adolescents reported its use in their schools. This finding was supported by a study conducted by Orodho *et al.*, (2013) among students in public secondary schools in Kenya. Their findings indicated a scarcity adequate and suitable of LSE instructional materials (Orodho *et al.*, 2013). Another study by Abo and Hooroo (2014) shows similar challenges as it established that resources were inadequate in a number of secondary schools (Abo & Hooroo, 2014). LSE also faces a problem of inadequate knowledge.

Only 1% of the adolescents reported on availability and use of anti-depressant medications within the schools. The reason could be the gaps outlined in the previous studies. For instance, cases of diarrhea, headaches, sleep problems and nausea have been reported in some antidepressants while Tricyclics are likely to cause problems with sight, constipation, light-headedness, dry mouth, vibrations and difficulty in passing urine. A considerable number of the antidepressant users manifest lasting symptoms that prompt the re-emergence or relapse of the disorders (Hetrick *et al.*, 2012). The other reasons speculated for the limited use of antidepressants was that some persons do not respond to medications; others decline to take them, while in some parts of the world the depression medications are expensive (Wagner *et al.*, 2003). The other shortcoming of these medications is that they increase suicidal behaviour among some people (Keller *et al.*, 2001; Hetrick *et al.*, 2012). Kessler *et al.*, (2007) advises against the use of paroxetine among the youth because of their potency and safety concerns (Kessler *et al.*, 2007).

Guidance and counseling teachers also reported that few schools stocked antidepressants. This is because of the use of antidepressants among minors is still an issue of debate due to indications, efficacy, the severe side effects. An earlier meta-analysis supported that antidepressants of different kinds showed limited effectiveness in addressing adolescent depression (Tsapakis *et al.*, 2008). Furthermore, legal issues in Kenya use of antidepressants still limits usage in school settings. Kessler *et al.*, (2007) advises against the use of paroxetine among the youth because of their potency and safety concerns (Kessler *et al.*, 2007). Findings also revealed that only 4% of the adolescents reported the use of IPT. The low use of IPT in this study could be attributed to lack of professional to implement it. This finding is supported by a study by Ivanhoe *et al.*, (2013). Although the IPT is an important depression treatment, it has been applied in few settings for a lack of adequate expert therapists who are expected to monitor their patients closely (Ivanhoe *et al.*,

2013). The study found limited use of other psychotherapies. CBT is one of the psychotherapies that are in limited use in Kenya. The reason for the limited usage of CBT may be linked to its short-livedness, its focus of on the problem and need for combination with other therapies to be effective (Ferdon, 2008). PDT is also scarcely in use for its unstructured nature, making it difficult for therapist to establish its effectiveness. PDT takes a longer time to realize wellness thus making it expensive in the long run (Bastos *et al.*, 2015).

PDT, CBT and WBT among other therapies were not being used in the management of depression among secondary schools in Kakamega County, Kenya. This finding is contrasted by the findings of a systematic review done by Das *et al.*, (2016) which showed that quiet a number of psychotherapies are in use in various parts of the world especially in High income countries (Das *et al.*, 2016). WBT has been found effective in other schools settings and may thus be considered for use in Kenya (Ruini *et al.*, 2006; Ruini *et al.*, 2009). This meant that there was need for inexpensive interventions for adolescent mental health issues such as depression. In Kenya, other therapies have been used. For example, an RCT conducted in Nairobi using a group intervention administered by laypersons (Osborn *et al.*, 2020) focused on both depression and anxiety. The group intervention administered by lay people produced greater reductions in adolescent anxiety symptoms from baseline to 4-week follow-up, and greater improvements in academic performance. The group intervention taught the 13-18 year old adolescents on a growth mindset, an attitude of gratitude, and value affirmation (Osborn *et al.*, 2020). Another study in Kenya contrasts this finding. The study by Venturo - Conerly *et al.*, (2022) showed that using a one day single digit intervention by lay persons was effective (Venturo - Conerly *et al.*, 2022). Although there was attrition after two week.

5. Conclusion

The study found that observation of depression signs by peers and teachers as well as referrals were being used. Adolescents, teachers, school sponsors and guardians need to be trained on depression symptoms for proper screening. The study concluded that there was no use of the standardized depression screening tools in most schools. There was need for the adolescents, teachers, school sponsors and guardians need to be trained depression screening tools. On the second objective on depression interventions, the study concluded that most schools do not stock antidepressants and rely on guidance and counseling as well as life skills as the methods for depression management. Most guidance and counseling teachers, adolescents and even the adolescents themselves are unaware on the psychotherapies thus the need to train them on them. The study therefore recommends that the Ministry of Education should include a policy statement on the use of psychotherapies as depression interventions among adolescents in schools. The study also found that the teachers implementing the guidance and counseling are utterly strained and thus the need for staffing of psychotherapists for schools.

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Acknowledgement: All participants

Conflict of Interest: The authors declare no conflict of interest.

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