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Relationship between Mental Health Literacy and Mental Well-being among Students in Secondary Schools in Homa Bay County, Kenya

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Abstract: *Reports by World Health Organization indicate that 25% of Kenyans suffer from mental health problems. The most common of these are depression and anxiety with preval9-2ence rates of 28.1% and 38% respectively among students in secondary schools nationally. In Kakamega County, Kisii County and Migori County prevalence rates of depression among students are 44.8%, 23% and 23.6% respectively. In Homa Bay County, the prevalence of depression and anxiety among students is 57.5% and 49.4% respectively. Evidently, the prevalence in Homa Bay County is worrying yet no study has been conducted to address mental health problems among students in secondary schools in Homa Bay County. Studies indicate that mental health literacy (MHL) can help alleviate mental health problems. It is for this reason that this study was conducted with a purpose to assess the nature of relationship between MHL and mental well-being among students in secondary schools in Homa Bay County. The study population was 131,749 students from form1 to form 4. Stratified random and purposive sampling were used to select 400 respondents using Yamane's formula. Data was collected using questionnaires and focus group discussions (FGDs). A pilot study was conducted among 30 students based on the rule of thumb recommending it as a popular number for piloting. The findings showed that levels of MHL positively correlated with mental well-being r(382) = .822, p = .00. It was concluded that MHL positively correlated with mental well-being. Based on the findings, it was recommended that schools teach MHL to improve mental well-being among students.*

Keywords*: Mental health, Well-being, Literacy, Depression, Anxiety, Assess*

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1. Introduction

Mental well-being is the experience of positive emotions such as happiness and contentment as well as the development of one's potential, having some control over one's life, having a sense of purpose and experiencing positive relationships (Ruggeri, Garcia-Garzon & Huppert, 2020). Good mental health literacy helps young people recognize mental health difficulties in themselves and in others and seek help for mental health problems. Improved help-seeking can allow for early intervention, which prevents the progression of mental disorders and ultimately reduces the burden of mental disorders (Ma, Burn & Anderson, 2023). MHL is the ability to recognize mental health problems, knowledge of mental health, resilience building strategies and attitude towards appropriate help-seeking behaviours (Tully, et al., 2019).

Students in secondary schools are especially at risk of mental health problems (Sokolova, 2024). Studies show that prevalence of depression and anxiety respectively among students in secondary schools is 13.7% and 11.5% in China (Zhao & Hu, 2022); 41.4% and 66.7% in Ethiopia (Nakie, Segon & Melkam, 2022). In Kenya, prevalence of depression and anxiety is 28.06% and 38% nationally (Osborn, Venturo-Conerly & Gan, 2021). Prevalence of depression is 44.8% in Kakamega County (Bakesia et al., 2023); 23% in Kisii County and 23.6% in Migori County (Wangila and Oseko, 2023). In Homa Bay County prevalence of depression and anxiety is 57% and 49.4% respectively (Nyayieka, Nyangwecha & Nzyuko, 2020). While depression and anxiety can impair students' academic achievement and lead to school dropout (Nakie et al., 2022). Mental health literacy (MHL) has been identified as effective in improving mental health outcomes yet not much has been done to determine ways of improving mental well-being among students in secondary schools in Homa Bay County thus calling for this study.

1.2 Research Question

This study was guided by the following research question:

What is the relationship between mental health literacy and mental well-being among students in secondary schools in Homa Bay County?

2. Literature Review

Bjornsen et al. (2019) conducted a study among adolescents in secondary schools in Norway to examine the relationship between MHL and mental well-being. A total of 1,888 adolescents were sampled. The study established that MHL is a significant determinant of mental health. This study, however, was cross-sectional and could not suggest cause and effect. To improve on this, the current study included quasi experiment which has the ability to suggest cause and effect. In a study carried out by Beukema et al. (2021) in Netherlands to determine relationship between MHL and mental well-being, MHL was found to help prevent mental health problems. Online focus group discussions FGDs) and interviews were used to collect data from a sample of 58 adolescents in secondary schools. The study recorded a limitation due to sampling method through social media and snowballing which may have led to a restricted sample as these strategies most likely yield participants with similar characteristics as they are in the same social networks, and it could have influenced the data saturation as participants with similar characteristics were more likely to give similar answers. Thus, a more balanced sample might have yielded other additional experiences and needs. This limitation was mitigated in the current study by using stratified sampling techniques which led to a more representative and balanced sample. The reviewed study was also purely qualitative, and analysis of data may have been affected by bias. The current study used both qualitative and quantitative data. Analysis of quantitative data relies on standard measures thus objective. Qualitative data from FGDs was useful in triangulating the data obtained from questionnaires.

Another study by Slyke (2020) carried out among university students in United States found that MHL has a positive influence on mental well-being. A questionnaire was used to collect data from 277 students and 9 employees at a public university. The following limitations were reported: the survey was only sent to students in the School of Nursing, School of Health and Rehabilitation Science, College of General Studies, and to select majors within the School of Arts and Sciences, showing that the data was not representative of the entire undergraduate student body. Furthermore, at the closing data collection period, the COVID-19 pandemic began in the United States, which impacted data collection as the university commenced online classes, and communication became more difficult. The researcher in the current study addressed these limitations by using stratified sampling technique which produces a more representative sample. In addition, there was no interruption on the process of data collection.

In Africa, Korhonen et al. (2022) conducted a study with a population of primary healthcare workers (n = 250) in South Africa and Zambia to assess the impact of MHL on mental well-being. Results showed that MHL positively correlated with mental well-being. The sample population in this study were healthcare workers who could be more mature and exposed than students in secondary schools. The age and exposure variance may influence the results. In addition, Hassen, et al. (2021) conducted a study among adolescents in secondary schools in Ethiopia. A sample of 934 students was selected and a questionnaire was used to collect data. The study found that MHL had an influence on mental health. The reviewed study relied on self – reports which may have been inaccurate if the participants were dishonest. To mitigate this gap, the current study used FGDs together with questionnaires to collect data. The information from the FGDs was used to triangulate information from the questionnaires. Amosu and Uzoechi (2021) also established impact of mental health education on depression among students in secondary schools in Nigeria. A semi-structured questionnaire was used to collect data from 120 students. Level of depression reduced significantly after MHL intervention. This study established the relationship between MHL and depression only while the current study correlated MHL and both depression and anxiety. In addition, the reviewed study was cross-sectional and could not suggest causality. The current

study used a quasi-experimental thereby suggesting causality.

Another systematic review study was carried out in Uganda by Ozparlak et al. (2023) to determine the relationship between MHL and mental well-being. A total of 12 studies with 4659 young people were included. It was concluded that there was no correlation between MHL and mental well-being in young people ($p > 0.05$, $r = 0.06$, 95% CI = -0.05 to 0.16). These findings were based on secondary data which could be outdated. The current study will collect primary data, providing information specific to the study population as at the time. Amone-P'Olak, Kakinda & Kibedi (2023) also conducted a study in Uganda to assess influence of MHL on depression among early adults. Data was collected from 56 students in two universities using questionnaires. MHL significantly predicted depression. This study relied on self-reports which may have been inaccurate due to dishonesty. The current study mitigated this gap by using both questionnaire and FGDs to collect data. Information collected through FGDs was useful in triangulating that which was collected through questionnaires. In Tanzania, Kutcher, Wei & Gilberds (2017) conducted a study to explore MHL and mental well-being among secondary school teachers. Thirty seven (37) teachers were trained on the African Guide (AG) a school MHL curriculum resource and its impact on their MHL was evaluated. Following the increase in MHL, the teachers reported that their mental well-being improved significantly. The reviewed study was conducted among teachers while the current study was carried out among students in secondary schools. The age variance could lead to different findings.

In Kenya, Wadende & Sodi (2023) conducted a study with 32 rural northern Kenya Turkana-based adolescents to explore MHL among the youth. FGDs were used to collect data. The study emphasized the need for MHL in order to promote overall mental well-being. This study was carried out among adolescents in the rural and the findings may not apply to those in the urban areas. The current study addressed this limitation by sampling students both from the rural and urban secondary schools in Homa Bay County. A similar study was conducted by Ayiro et al. (2023) to determine stress levels and MHL among secondary school students in Kenya. A total of 400 students participated in the study. A questionnaire was used to collect data. The study determined that MHL could help reduce stress and other mental health problems. This study relied on self-report which could be inaccurate due to dishonesty on the part of respondents. In the current study, data from questionnaires was triangulated by data from FGDs.

2.1 Theoretical Framework

This study was anchored on Health Belief Model (HBM). HBM is a foundational framework in health behaviour research. It was conceptualized in the 1950s by Irwin M. Rosenstock, Godfrey M. Hochbaum**,** Stephen Kegeles and Howard Leventhal to help understand preventative health behaviour by social psychologists specifically "the widespread failure of people to accept disease preventatives or screening tests for the early detection of asymptomatic disease." The model focuses on how individuals perceive health threats and decides to act based on the value individuals place on a particular goal and the likelihood that actions taken toward that goal will be successful in achieving the goal. It consists of 6 primary cognitive constructs, or "dimensions" that influence behaviour: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action (Alyafei & Easton-Carr, 2024). HBM can be used to understand how people perceive MHL and mental well-being issues and what influences their willingness to seek help or engage in mental health-promoting behaviours such as therapy, medication and self-care. Many people avoid MHL and help-seeking for mental health due to stigma, misconceptions or lack of awareness and HBM helps explain these behaviors. The six constructs were applicable as follows: 1) Perceived Susceptibility (Am I at risk for mental health issues); some students may not believe they are at risk for mental health conditions, even if they experience symptoms like anxiety or depression. 2) Perceived Severity (How serious is mental illness?); some may downplay the seriousness of depression and anxiety or think they will "just go away. 3) Perceived Benefits (How can MHL or help-seeking be of benefit to me?); If students believe MHL, therapy and help-seeking can improve their condition, they are more likely to seek help. 4) Perceived Barriers (What obstacles prevent me from seeking help?); Barriers can include stigma, cost, lack of access to care, or cultural beliefs. 5) Cues to Action (What triggers me to seek help?); external factors like mental health literacy education, media campaigns, advice from friends or doctors, or personal experiences can prompt action. 6) Self-Efficacy (Do I believe I can take action to improve the level of my MHL?); Confidence in seeking help or making lifestyle changes is crucial. The HBM was considered relevant to the current study as MHL guide outlines the various mental health problems, symptoms, causes, predisposing factors, preventive measures, available help, self-care, as well as addressing issues on stigma towards mental health. Therefore, a high level of MHL was expected to improve mental well-being as well as attitudes that promote appropriate help-seeking behaviour towards mental health and vice versa. The study was also expected to extend the application on HBM as it focuses on how individuals perceive health threats and decide to act based

on the value individuals place on a particular goal and the likelihood that actions taken toward that goal will be successful in achieving the goal. This study envisioned that the threat of mental health problems would increase with the increase in the levels of MHL which in turn would improve attitudes towards help-seeking for mental health. Students who have higher levels of MHL are expected to be more aware of the risks of mental health problems and more willing to disclose and seek help compared to those with lower levels of MHL.

3. Methodology

3.1 Research Design

The study employed correlational and quasi-experimental research designs. Correlational research design measures two or more pertinent variables in the same sample and assesses a relationship between or among them (Lillykutty & Rebecca, 2018). This was appropriate in order to suggest the effect of the mental health literacy guide on levels of MHL, mental well-being and attitudes that promote appropriate help-seeking behaviour.

3.2 Area of Study

Homa Bay County is located in Western Kenya. It borders Migori County to the South, Kisii County and Nyamira County to the South East, Kericho County to the East, Kisumu County to the North and Lake Victoria to the North and North West. Homa Bay County sits on a Latitude of $0^0$40`60.00``N and Longitude of $34^0$27`0.00`` E. The county's primary school net enrolment rate is high at 98%. Over 58% of children in the official secondary school-age are also enrolled in secondary schools. The county has 1451 Early Childhood Centers, 1089 primary schools and 312 secondary schools out of which 2 are national and 23 extra-county. In addition, it has over 20 tertiary institutions. It also has 164 medical facilities with 4 district Hospitals, 7 sub-district hospitals, 38 health centres, 88 dispensaries, 14 medical clinics. The prevalence rate of depression and anxiety disorders among adolescents in Homa Bay County is 57.5% and 49.4% respectively. This is extremely high compared to the national statistics where the prevalence rate of depression and anxiety disorders is 28.1% and 30.4% respectively. The high prevalence could be attributed to the high levels of poverty and child dependency ratio in the county. This is worrying hence the need to establish level of MHL, and it relates with mental well-being and help-seeking behaviour and possible interventions.

3.3 Study Population

The target population consisted of 131,749 students in F1-F4 in secondary schools in Homa Bay County which represented all the classes across different ages in secondary schools.

3.4 Sample and Sampling Procedures

The researcher used stratified random sampling to select students from 6 boarding secondary schools (3 girls' and 3 boys') based on 3 categories: national, extra-county and county and 4 sub county secondary schools in Homa Bay County. A sample size of 399 students was selected using Yamane's formula at a confidence level of 95%. As was the case in the current study, Yamane's sample calculation is the most ideal method to use when the only thing one knows about the underlying population, they are sampling is its size, Yamane (1967). Further, 80 students were selected from the sampled population using purposive sampling technique to take part in the quasi experiment. The participants were selected from one school to ensure homogeneity. The school from which the students were selected was a mixed day school in order to provide for gender differences. Another consideration was that the school has at least two streams so as to enable the researcher to select students of the same class but from two different streams. Students from one stream became the control and those from the other stream were the experimental group. This is because for the success of a quasi-experiment the two groups are supposed to be as homogeneous as possible (Thomas, 2024).

3.5 Instrumentation

This study used closed ended questionnaires and FGDs to collect data. A questionnaire was considered appropriate for this study as it is easier and faster to answer and also enabled the researcher to get quantitative data. Generalized Anxiety Disorder Assessment (GAD-7) by Spitzer et al. (2006) was used to assess anxiety disorder and Patient Health Questionnaire-9 (PHQ-9) (Kroenke, 2021) was used to screen depression.

FGDs involve asking a group of people their perceptions, attitudes, beliefs, opinions and ideas on a specific topic of interest (Nyumba et al., 2018). FGDs sought information on students' attitudes towards help seeking for mental health, availability of school based mental health resources, relationship between MHL and interventions that can help improve MHL among the students. FGDs are appropriate for this study as they allow the researcher to get in-depth information that may be used to triangulate the data from questionnaires.

3.6 Reliability and Validity

A pilot study was conducted to pre-test the instruments in order to ascertain their reliability and validity. The pilot study was carried out among 30 students and 2 FGDs. The sample size for the pilot study was determined based on the flat rule of thumb by Machin et al. (2018). This rule of thumb states that 30 is a popular single number suggested for pilot sample in every situation. Piloting helps the researcher to identify questions and terminologies that may not be well understood which were then corrected. Reliability coefficients of .91, .89 and .88 were established for the questionnaire, PHQ-9 and GAD-7 respectively using test re-test method.

3.7 Data Analysis

Data collected was sorted, edited, coded, classified and tabulated. Data on help-seeking behaviour and those on interventions to improve MHL were analyzed using means and percentages. Pearson's correlation coefficient was used to determine correlation between availability of school based mental health resources, help-seeking behaviour and MHL. Regression analysis was used to find the effect of mental health guide on MHL, mental well-being and help-seeking behaviour. Pearson's correlation coefficient is useful in determining linear relationship between two variables thereby establishing a monotonic relationship between the variables as such, it was appropriate for this study (Kang et al. 2019). Independent samples t-test helped to determine if exposure to mental health guide contributes to difference in level of MHL among the students. Qualitative data collected from FGDs were transcribed and categorized as per the objectives of the study and presented thematically.

4. Results and Discussions

This study aimed to assess the nature of relationship between MHL and mental well-being among students in secondary schools in Homa Bay County. Scores on level of depression and anxiety were obtained from the students' responses to PHQ-9 and GAD -7 which consisted of statements that help to determine symptoms of depression and anxiety. PHQ-9 has nine statements on depression while GAD-7 has seven statements on anxiety. The statements sought frequency of occurrence of the symptoms based on a 4 – points Likert scale ranging from not at all - 0 to nearly every day - 3. The minimum score for the test was 00 and the highest possible score was 45. Linear regression analysis was employed since it can be used to model linearly separable data sets and can be used to find the nature of the relationship among variables (Iqbal, 2021).

4.1 Severity of depression and anxiety

Scores for anxiety ranged from 5(.5%) -20(.5%), scores for depression ranged from 3(.5%) -12(4.5%) and total scores ranged from 8(.3%)-32(.5%).
Severity of depression and anxiety was determined based on the guidelines of the authors of GAD (Spitzer, et al., 2006) and PHQ-9 (Kroenke et al., 2021). Results are presented on table 1.

Table 1: Level of severity of depression and anxiety

Level of severity	Depression f(%)	Anxiety f(%)
Minimal (0-4)	10(2.6%)	0(00%)
Mild (5-9)	272(71.2%)	24(5.4%)
Moderate (10-14)	100(26.2%)	189(49.6%)
Moderately severe (15-19)	0(00%)	166(50.6%)
Severe (20 and above)	0(00%)	2(.5%)

From the findings, the prevalence of depression among the students was 2.6% (minimal), 71.2% (mild) and 26.2% (moderate). Prevalence of anxiety was 5.4% (mild), 49.6% (moderate) and 50.6% (moderately severe). The results show that the majority of the students have mild depression and moderately severe anxiety.

4.2 Average level of depression and anxiety

In order to determine the average level of depression and anxiety, the means were worked out. The results are presented on table 2.

Table 2 Mean scores of level of depression and anxiety N=382

	Average on mental health problems	Depression	Anxiety
Mean	22.2200	7.3188	15.9077
Std. Deviation	3.88195	1.92169	2.83237

Results of the study show that the mean scores for depression was $M = 7.32$, $SD = 1.92$ and that of anxiety was $M = 15.91$, $SD = 2.83$. These findings confirm that most of the students suffer from mild depression and moderately severe anxiety.

From the findings, the prevalence of depression and anxiety among the students in secondary schools in Homa Bay County is high. The current study found a higher prevalence than those of the previous studies. For instance, a study by Bakesia et al. (2023) conducted in Kakamega County registered prevalence of depression of 44.8% while in Homa Bay County, Nyayieka et al. (2020) found prevalence of 57% for depression and 49.4% for anxiety among adolescents in secondary schools. For this reason, the high prevalence of anxiety and depression among students in secondary schools in Homa Bay County cannot be overemphasized. However, unlike the reviewed studies, the current study determined the level of severity of depression and anxiety. This is important since treatment of mental health problems is determined by the level of severity. This will make it possible to determine the best cause of action in the case of students in secondary schools in Homa Bay County.

4.3 Correlation of MHL and mental well-being

A correlation analysis was performed to find out the relationship between MHL and mental well-being among students in secondary schools in Homa Day County. The results are presented in Table 3.

Table 3: A Correlation analysis on the level of MHL and mental well-being. (N=382).

	Mental well-being	Depression	Anxiety	MHL
Mental well-being	1			
Depression	.727**	1		
Anxiety	.892**	.584**	1	
MHL	.822**	.565**	.754**	1

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

The findings show that level MHL and mental well-being were highly positively correlated $r(382) = .822$, $p = .00$. Likewise, level of MHL was highly correlated with depression and anxiety ($r(382) = .565$, $p = .00$ and $r(382) = .754$, $p = .00$ respectively. This means that students who had higher scores on MHL indicated higher prevalence of symptoms associated with mental health problems (depression and anxiety). This implies that the students who had higher scores on MHL had better awareness on mental health matters including symptoms of mental health problems as well as the need for disclosure compared to the students who had lower scores on MHL. The former were therefore able to associate their experiences with the symptoms of mental health problems. They were also able to disclose more than those with lower levels of MHL.

4.4 Mean scores for mental well-being, depression and anxiety for experimental and control groups

The researcher further worked out the mean scores of level of mental well-being and those for depression and anxiety for the experimental group (34) and control group (35). The results are presented in Table 4.

Table 4: Mean scores for mental well-being of experimental and control groups before and after intervention (N=69)

	Experimental Group		Control Group	
	Mean	**SD**	**Mean**	**SD**
Level of depression before intervention	8.50	4.47	6.17	4.39
Level of depression after intervention	11.85	5.99	10.66	8.42
Level of anxiety before intervention	8.26	3.99	6.14	4.46
Level of anxiety after intervention	10.81	5.68	9.11	6.99
Average mental well-being before intervention	16.77	7.54	12.31	14.72
Average mental well-being after intervention	22.79	11.19	19.77	7.73

Before the intervention, the average scores for symptoms of mental health problems for the experimental group was (M = 16.77, SD = 7.54) and that for control group was (M=12.31, SD = 14.72). There was an increase in the scores of symptoms of mental health problems for the experimental group (M = 22.79, SD = 11.19) as well as for the control group (M=19.77, SD = 7.73) after the intervention. Similarly, level of depression increased from (M=8.5, SD = 4.47) to (M=11.85, SD = 5.99) for experimental group and (M=6.17, SD = 4.39) to (M=10.66, SD = 8.42) for control group. Likewise, level of anxiety increased from (M=8.26, SD = 3.99) to (M=10.81, SD = 5.68) for experimental group and (M= 6.14, SD = 4.46) to (M=9.11, SD = 6.99) for control group. The results indicate a general increase in levels of symptoms for mental health problems in both experimental and control groups. This could be attributed to the general increase in awareness of mental health issues following the exposure to the pre-test. When the students responded to the questionnaire during the first test, they were exposed to items on mental health which may have increased their awareness on the same. They were therefore able to better associate their experiences with the symptoms of depression and anxiety as well as improve on the level of disclosure leading to the rise in the scores. These findings also assert that the higher the level of MHL level, the better the ability to associate experiences to mental health problems resulting into higher scores on mental health issues as indicated in table.

Further, independent sample t-test was conducted to establish group difference in the level of mental well-being of experimental and control groups before and after the intervention. The results are presented in table 5.

Table 5: Independent t-test showing group difference for experimental and control groups in the level of mental well-being.

Mental well-being	**Sig.**	**t**	**Sig. (2-tailed)**
Average mental well-being before intervention	.902	.947	.347
Average mental well-being after intervention	.185	2.42	.018

Based on the results in table 4.4.6, there was no significant group difference in mental well-being between experimental group (M = 16.77, SD = 7.54) and control group (M=12.31, SD = 14.72) before the intervention, (t(69) = .902, p = .347). However, there was a statistically significant group difference in mental well-being between the experimental group and control group after the intervention. This means that the experimental group had a higher level of recognition of symptoms of mental health problems (M = 22.79, SD = 11.19) than the control group (M=19.77, SD = 7.73), (t(69) =.2.42, p = .018). This difference was attributed to the exposure of the experimental group to the MHL programme. As expected, when the students were exposed to the MHL programme, their knowledge about mental health problems including symptoms increased. Consequently, they were able to associate their experiences with the symptoms of depression and anxiety thereby recording higher scores. These results further affirm that the higher the level of MHL, the better the ability to associate experiences with mental health issues which then lead to higher scores on mental health problems. Ability to recognize mental health problems is one of the tenets of MHL. This is a positive step towards seeking treatment which eventually leads to better mental health. This therefore means that with increased MHL, students are better able to recognize symptoms of mental health problems which is the first step towards help-seeking eventually improving mental health.

4.6 Correlation of MHL and mental well-being for experimental and control groups

To establish the relationship between MHL and mental well-being before intervention, bivariate correlation analysis was conducted for the control and experimental groups. The results are presented in table 6.

Table 6: A Correlation analysis on MHL and mental well-being of experimental and control groups before intervention. (N=69)

	Anxiety	Depression	Mental well-being	MHL
Anxiety	1			
Depression	.584**	1		
Mental well-being	.119	.334	1	
MHL	-.039	-.090	-.033	1

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

Results show that there was no significant relationship between level of MHL and mental well-being before the intervention ($r(69) = -.033$, $p = .79$). There was also no significant relationship between level of MHL with either level of depression or level of anxiety before the intervention ($r(69) =- -.09$, $p = .46$ and $r(69) = -.04$, $p = .75$) respectively. Depression and anxiety were highly positively correlated *(r(69)=*.584,*p=*011*)*. The findings indicate that level of MHL was not a determinant of mental well-being before the MHL intervention. This is interesting given that in all the other scenarios, MHL was found to have a significant association with mental well-being. The discrepancy could be attributed to the fact that students may have limited knowledge on MHL at pre-test and may have just responded without much thought. This may have been confounded by the small sample for the quasi experiment.

To establish the relationship between MHL and mental well-being after intervention, bivariate correlation analysis were conducted for the control and experimental groups. The results are presented in table 7.

Table 7: A Correlation analysis on MHL and mental well-being of experimental and control groups after intervention. (N=69)

	Anxiety	Depression	Mental well-being	MHL
Anxiety	1			
Depression	.822**	1		
Mental well-being	.948**	.961**	1	
MHL	.273*	.261*	.278*	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

The findings show that the level of MHL and mental well-being after the intervention had a significant positive relationship ($r(69) = .278$, $p = .022$). Both depression and anxiety correlated positively with MHL after intervention with Pearson's correlation coefficient being $r(69) = .261*$, $p = .030$ and $r(69) = .273$, $p = .025$ respectively. This is a clear indication that the MHL programme intervention increased level of awareness of mental health problems and their symptoms. It also increased the level of disclosure. The students were therefore able to associate their experiences with symptoms of depression and anxiety and were also more positive about disclosure, hence the higher scores.

4.7 Regression analysis on MHL and mental well-being

Linear regression analysis further showed the effect of level of MHL of the experimental group on their mental well-being. Linear regression technique was employed since it can be used to model linearly separable data sets and can also be used to find the nature of the relationship among variables (Iqbal, 2021). The results of regression analysis on general mental well-being and MHL of experimental group after intervention are presented in table 8.

Table 8: Regression analysis on general mental well-being and MHL of experimental and control groups.

R Square	df	F	Sig
.177	1	5.511	.022
	67		
	68		

Predictor: MHL after intervention

Dependent: Mental well-being after intervention.

Results on table 4.7.1 show that level of MHL predicted level of mental well-being after the intervention, $R^2 = .177$, $F(1,68) = 5.51$, $p = .022$. With increased level of MHL, students were better able to associate their experiences with

symptoms of depression and anxiety and disclose the same hence higher scores.

Linear regression analysis was also conducted to ascertain the effect of MHL on the level of depression after the intervention. The results are presented in table 9.

Table 9: Regression Analysis on MHL and anxiety after intervention.

R Square	df	F	Sig
.174	1	5.295	.025
	67		
	68		

a. Predictors: (Constant), MHL after intervention
b. Dependent Variable: Anxiety after intervention

MHL predicted level of anxiety after intervention, R2 = .174, F(1,67) = 5.30, p = .025. This means that level of anxiety was dependent on the level of MHL after the intervention.

Table 10: Regression Analysis on MHL and depression after intervention.

R Square	df	F	Sig
.168	1	4.902	.030
	67		
	68		

Constants: MHL
Dependent: Depression

Level of MHL predicted level of depression after intervention, R2 = .168, F(1,67) = 4.902, p = .030. This means that level of depression was dependent on level of MHL.

Just like in the studies by Renwick et al. (2022), Korhonen et al. (2022), Kutcher et al. (2017), Hassen, et al. (2021), Ayiro et al. (2023), Jumbe et al. (2022) and Amone-P'Olak et al. (2023), the findings of the current study show a positive statistically significant relationship between MHL and mental well-being among students. Compared to students with lower levels of MHL, students who exhibited higher levels of MHL were better able to associate their experiences with symptoms of depression and anxiety. They were also able to disclose the same hence being more likely to seek help for mental health. This is in tandem with the definition of MHL as the ability to recognize mental health problems, knowledge of mental health, resilience building strategies and attitude towards appropriate help-seeking behaviours (Tully et al., 2019). This is a pointer that MHL can help alleviate the mental health problems among students in secondary schools in Homa Bay County. The findings also suggest that the MHL programme had a positive effect on level of MHL which in turn made it possible for the students to identify symptoms of mental health problems and also be free to express them. This supports the results of a study by Slyke (2020) that mental health education has a positive influence on MHL.

5. Conclusion and Recommendations

5.1 Conclusion

Findings showed that for the general sample population, levels of MHL were highly positively correlated with mental well-being, $r(382) = .822$, $p = .00$; depression ($r(382) = .565$, $p = .00$ and anxiety $r(382) = .754$, $p = .00$. Students who had higher scores on MHL indicated higher scores on symptoms associated with mental health problems as they were better knowledgeable and able to associate their experiences with the symptoms. They were also more open to disclosure due to reduced stigma.

Results of the quasi experiment showed that levels of MHL and mental well-being after the intervention had a significant positive relationship ($r(69) = .278$, $p = .022$). Both depression and anxiety correlated positively with levels of MHL after intervention; $r(69) = .261$, $p = .030$ and $r(69) = .273$, $p = .025$ respectively. However, there was no significant relationship between levels of MHL and mental well-being before the intervention ($r(69) = -.033$, $p = .79$). There was also no significant relationship between levels of MHL with either levels of depression or levels of anxiety before the intervention ($r(69) =- -.09$, $p = .46$ and $r(69) = -.04$, $p = .75$) respectively. However, linear regression analysis established that after intervention levels of MHL predicted levels of mental well-being, $R^2 = .073$, $F(1,67) = 5.51$, $p = .022$; levels of anxiety, $R^2 = .074$, $F(1,67) = 5.30$, $p = .025$ and levels of depression, $R^2 = .068$, $F(1,67) = 4.902$, $p = .030$. This was a clear indication that the MHL intervention increased levels of awareness of mental health problems and levels of disclosure.

It was concluded that prevalence of anxiety and depression among students in secondary schools in Homa Bay County

was high. There was also a positive relationship between MHL and mental well-being especially after the MHL intervention (R^2 = .073, F(1,67) = 5.51, p = .022).

5.2 Recommendations

It is important to promote MHL in order to improve mental well-being among secondary school students. Further study should explore strategies that can be put in place to improve levels of MHL among students in secondary schools.

References

Alyafei, A., Easton-Carr R. (2024). Health Belief Model of Behavior Change. In: StatPearls Treasure Island (FL): StatPearls Publishing.

Amone-P'Olak, K., Kakinda, A. I., Kibedi, H. & Omech, B. (2023). Barriers to Treatment and Care for Depression among the Youth in Uganda: The Role of Mental Health Literacy. *Front. Public Health 11*:1054918.

Amosu, A. M. & Uzoechi, C. A. (2021). Effect of School-Based Educational Interventions on Depression-Related Health-Seeking Behaviour among in-School Adolescents in Ogun State, Nigeria. *European Journal of Health Sciences, 6*(5), 1 - 14.

Ayiro, L., Misigo, B. L. & Dingili, R. (2023). Stress levels, Coping Strategies, and Mental Health Literacy among Secondary School Students in Kenya. *Front. Educ. Sec. Educational Psychology Vol. 8,* 1-10:1099020.

Bakesia, G., Olayo, R., Mengich, G. & Opiyo, R. (2023). Prevalence and Sociodemographic Predictors of Depression among Adolescents in Secondary Schools in Kakamega County, Kenya. *East African Medical Journal; 100(8).*

Beukema, L., Tullius, J. M., Korevaar, L., Hofstra, J., Reijneveld, S. A., & de Winter, A. F. (2022). Promoting Mental Health Help-Seeking Behaviors by Mental Health Literacy Interventions in Secondary Education? Needs and Perspectives of Adolescents and Educational Professionals. *International Journal of Environmental Research and Public Health, 19*(19), 11889.

Bjørnsen, H. N., Espnes, G. A., Eilertsen, M-E. B., Ringdal, R. & Moksnes, U. K. (2019). *The* Relationship between Positive Mental Health Literacy and Mental Well-Being among Adolescents: Implications for School Health Services. *The Journal of School Nursing;* 35(2):107-116.

Hassen, H. M., Behera, M. R., Jena, P. K., Dewey, R. S. & Disassa, G. A. (2021). Mental Health Literacy of Adolescents and the Effect of Socio-demographic Characteristics: A Cross-sectional Study in Urban Ethiopia. *Online J Health Allied Scs;20(4),*6.

Iqbal, M. A. (2021). Application of Regression Techniques with their Advantages and Disadvantages. *ResearchGate 4,* 11-17.

Kang, J. S., Shin, D. H., Baek, J. W & Chung, K. (2019). Activity Recommendation Model Using Rank Correlation for Chronic Stress Management. *Applied Sciences. 9(20),*4284.

Korhonen, J., Axelin, A., Stein, J. D., Seedat, S., Mwape, L., Jansen, R., Groen, G., Grobler, G.,Jörns-Presentati, A. J., Katajisto & Lahti, M. (2022). Mental health literacy amongprimary healthcare workers in South Africa and Zambia. *Brain and Behaviour Journal. 12(12),* 1-2.

Kroenke, K. (2021), PHQ-9: Global Uptake of A Depression Scale. *World Psychiatry, 20:* 135-136.

Kutcher, S., Wei, Y., Gilberds, H., Brown, A., Ubuguyu, O., Njau, T., Sabuni, N., Magimba, A. & Perkins, K. (2017). The African Guide: One Year Impact and Outcomes from the Implementation of a School Mental Health Literacy Curriculum Resource in Tanzania. *Journal of Education and Training Studies, 5(4*), 64.

Lillykutty, M. J. & Rebecca, S. (2018). Selection of a quantitative research design. A DelicateTask. *International Journal of Development Research, 8(05),* 20573-20575.

Ma, K. K. Y., Burn, A. M., Anderson, J. K. (2023). Review: School-based mental health literacy interventions to promote help-seeking - a systematic review. *Child Adolesc Mental Health. 28(3):*408-424.

Machin, D., Campbell, M. J., Tan, S. B., Tan, S. H. (2018). Sample Sizes for Clinical Laboratory and Epidemiology Studies. 4TH Edition. Jojn Wiley and Sons. Hoboken.

Nakie, G., Segon, T., Melkam, M., Desalegn, G. T. & Zeleke, T. A. (2022). Prevalence and Associated Factors of Depression, Anxiety, and Stress Among High School Students in Northwest Ethiopia. *BMC Psychiatry, 22*:739.

Nyayieka, M. A., Nyagwencha, S. & Nzyuko, P. S. (2020). Prevalence of Clinical Depression and Anxiety among Adolescents in Selected Public Secondary Schools in Homa Bay County, Kenya. *African Journal of Clinical Psychology, 3, Issue 01.*

Nyumba, T. O., Wilson, K., Derrick, C. J. & Mukherjee, N. (2018). The Use of Focus Group Discussion Methodology: Insights from two Decades of Application in Conservation. *Methods Ecol Evol, 9(1)*, 20-32.

Osborn, T., Venturo-Conerly, K., Gan, J., Rodriguez, M., Alemu, R., Roe, E., Arango, S., Wasil, A., Weisz, J. & Wasanga, C. (2021). Depression and Anxiety Symptoms amongst Kenyan Adolescents: Psychometric Properties, Prevalence, Psychosocial and Socio-demographic Factors. *DO-10.31234/osf.io/ze8tf. Research Gate-* https://www.researchgate.net/publication/348540829

Ozparlak, A., Karakaya, D. & Ozer, Z. (2023). The Association of Mental Health Literacy with Mental Well-being and Help-seeking in Young People: A Systematic Review and Meta-Analysis. *Journal of Padeatric Nursing, Volume 73*, e243-e250.

Ruggeri, K., Garcia-Garzon, E., Huppert, F. A. 2020). Well-being is more than Happiness and Life Satisfaction: A Multidimensional Analysis of 21 Countries. *Journal of Health and* Quality *Life Outcomes, 18(1)*192.

Slyke, A. V. (2020). Exploring Mental Health Literacy among Undergraduate College Students. Thesis, published at University of Pittsburgh.

Sokolova, L. (2024). Mental Health Literacy and Seeking for Professional Help among Secondary School Students in Slovakia: A Brief Report. *Front. Public Health. Sec. Public Mental Health. 12(10),* 12:1333216. doi: 10.3389/fpubh.2024.1333216.

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). Generalized Anxiety Disorder 7 (GAD-7) [Database record]. APA PsycTests. https://doi.org/10.1037/t02591-000.

Thomas, L. (2024). Quasi-Experimental Design | Definition, Types & Examples. Scribbr.

Tully, L. A., Hawes, D. J., Doyle, F. L., Sawyer, M.G. & Dadds, M. R. (2019). A National Child Mental Health Literacy Initiative is Needed to Reduce Childhood Mental Health Disorders. *Australian & New Zealand Journal of Psychiatry. 53(4),* 286-290.

Wadende, P. & Sodi T. (2023). Mental health literacy: Perspectives from Northern Kenya Turkana adolescents. Cambridge Prisms: *Global Mental Health.10(35),* 1-8.

Wangila, C. and Oseko, A. (2023). *Review on Psychological Disorder among Adolescent Students and Proposed Intervention Strategies in Kenya.* African Journal of Education, Science and Technology,7(3).

Yamane, Y. (1967). Mathematical Formulae for Sample Size Determination.

Zhao, M. and Hu, M. (2022) A multilevel Model of the Help-seeking Behaviors among Adolescents with Mental Health Problems. *Front. Integr. Neurosci.* 2; 16:946842.