The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

Jonathan Chiwanda Banda[1,3]*, Michael Udedi[3,4,5], Leo Masamba[6], Olive Liwimbi[7], Chifundo Colleta Zimba[4,5], Moses Kamzati[8], Steve Mphonda[4,5], Wingston Felix Ng'ambi[2] and Adamson Sinjani Muula[1,2]

[1]Department of Community and Environmental Health, School of Global and Public Health, Kamuzu University of Health Sciences, Blantyre, Malawi

[2]The Africa Center of Excellence in Public Health and Herbal Medicine, Kamuzu University of Health Sciences Blantyre, Malawi

[3]Department of Curative and Medical Rehabilitation Services, Non-Communicable Diseases & Mental Health Unit, Ministry of Health, Lilongwe, Malawi

[4]Department of Epidemiology, University of North Carolina Project, Lilongwe, Malawi

[5]Department of Epidemiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States

[6]Oncology Unit, Department of Internal Medicine, Queen Elizabeth Central Hospital, Blantyre, Malawi

[7]Psychiatry and Behavioral Sciences, Zomba Mental Hospital, Zomba, Malawi

[8]International Training & Education Center for Health (I-TECH)- Malawi, Department of Global Health, University of Washington, City Centre, Lilongwe, Malawi

*Corresponding Author: Jonathan Chiwanda Banda, Non-Communicable Diseases and Mental Health Unit, Department of Curative and Medical Rehabilitation Services, Ministry of Health, P.O. Box 30377, Lilongwe 3, Malawi.

Received: July 12, 2024; **Published:** July 23, 2024

Abstract

Background: Depression is one of the most common mental health disorders in patients living with cancer worldwide. An understanding of the prevalence of depressive disorders among this sub-group of patients should inform both its prevention and management. There is currently little evidence on correlates of depressive disorders amongst the persons living with cancer in Malawi. Therefore, we conducted this study to estimate prevalence and correlates of probable major depressive disorder among patients living with cancer at a National Cancer Center based at Kamuzu Central Hospital (KCH), Lilongwe in Malawi.

Methods: We utilized a cross-sectional design nested in a larger quasi-experimental study which was evaluating the effect of integrating depression screening and management on clinical outcomes among patients living with cancer who were attending oncology services at Kamuzu Central Hospital in Lilongwe. A validated PHQ-9 tool was used to estimate prevalence and correlates of probable major depressive disorder. A total of 399 consented participants were enrolled from August to December, 2021.

Results: The study comprised more females (64%). Cervical cancer (33%), Kaposi's Sarcoma (16%), breast cancer (9%) and esophageal cancer (4%) were the top four common malignancies in the study. At least 55% of the study participants had depressive symptoms. The prevalence of probable major depressive disorders was 11.5 %; most (52%) of whom had moderate depressive symptoms on PHQ-9 scale. Patients supported by palliative care were associated with reduced odds of major depressive disorders 0.36 (95% CI: 0.14-0.94).

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

12

Conclusion: A high proportion of patients living with cancer had probable major depressive disorder. Patients supported by palliative care had reduced odds of probable major depressive disorder. There was need to integrate screening and management of depressive disorder as well as palliative care services among patients during routine cancer care in Malawi.

Keywords: cancer; prevalence; depression; Patient Health Questionnaire

Background

Most patients living with cancer have comorbid depression and depressive symptoms. However, they are often undiagnosed and untreated because health workers in oncology practice mistakenly perceive depression as an expected reaction to cancer [1-3]. In one study, it was reported that nearly three-fourths (73%) of patients living with cancer and depression could not receive appropriate psychiatric intervention and only 5% sought help from a mental health professional [4]. Such situation was worrisome considering that depression projections had been increasing with an estimated average of 0.6% in each year among patients living with cancer worldwide [5]. Besides, depression had also been reported as the most prevalent mental health disorder in this sub-group of patients [1, 2, 5-7]. Usually, most patients living with cancer would experience denial to the diagnosis, followed by emotional turmoil, nervousness, lack of concentration, difficulties in falling asleep, loss of appetite, irritability and intrusive thoughts about their future [4]. These experiences could lead to depression and depressive symptoms [4]. A systematic review of forty studies from Low and Middle Income Countries (LMICs) in 2021 reported a pooled prevalence of 21% for major depression using different types of screening tools among patients living with cancer [3]. In Babol, Iran, major depression was seen among 21.3% of the patients living with cancer [6]. Another study at King Hussein Cancer Center in Jordan reported depression prevalence of 23% using the patient health questionnaire (PHQ-9) [8]. Furthermore, in Pakistan, using the Aga Khan University Anxiety and Depression Scale (AKUADS), the prevalence was estimated at 48.9% [1, 9]. In Ethiopia depression was reported at 71% among patients attending to oncology services [10]. Prior to the study there has been dearth of data in relation to burden of depression among patients living with cancer in Malawi, however, worldwide estimates for major depression had been increasing with ranges from 3% to 58% among patients living with cancer [1, 8, 10-12]. Despite such increase in burden, whenever depressive disorders were correctly diagnosed, there would be available effective treatment options which patients could benefit and hence improving their prognosis from psychiatric perspective [13].

In settings where active screening was done, several factors with varying degrees had been reported to be associated with depression among patients living with cancer. These included: (a) individual factors such as age, sex, marital status, ethnicity, religion, cancer stage, type of cancer, phase of treatment; (b) social and contextual factors such as education and employment status, family and social support and access to health care (c) prior psychological factors such as pre-existing psychiatric illnesses, previous suicidal thoughts and family history of psychiatric illnesses [3, 10, 14-17]. In LMICs, depressive symptoms were most frequently associated with advanced disease, underweight, unemployment and low levels of education [3].

In Malawi, cancers contributed to 16% of Disability-Adjusted Life Years (DALYs) due to Non-Communicable Diseases (NCDs) in 2015 [18]. Top five common cancers were: Kaposi's sarcoma (34%), cervical cancer (25%), oesophageal cancer (12%), Non-Hodgkin's lymphoma (6%) and urinary bladder cancers (3%) [12, 19, 20]. However, little was known on the prevalence and correlates of major depressive disorder among patients living with cancer [12]. Therefore, this study was aimed at estimating the prevalence of major depressive disorders among patients living with cancer at Kamuzu Central Hospital (KCH) using a patient health questionnaire (PHQ-9), a depression screening tool which was validated in Malawi [21]. An understanding of the prevalence of depressive disorders in this subgroup of patients in a specific setting should inform both its prevention and management [3]. There is currently little evidence on correlates of depressive disorders amongst the persons living with cancer in Malawi. Therefore, we conducted this study to estimate prevalence and correlates of probable major depressive disorder among patients living with cancer at a National Cancer Center based at Kamuzu Central Hospital (KCH), Lilongwe in Malawi.

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

13

Materials and Methods
Study setting and design

We used a cross-sectional design nested in a larger quasi-experimental study to evaluate the effect of integrating depression screening and management on clinical outcomes among patients living with cancer. The study was conducted at a National Cancer Center (NCC) in Lilongwe, Malawi. The recruitment exercise was conducted between August 2021 and December 2021. This facility is the main referral for cancer cases from central and norther region of Malawi. The facility had annual registration of at least 960 new cases of various cancer diagnoses and both outpatient and admission services were being provided. During the conduct of the study, the facility was offering chemotherapy and palliative care services while radiotherapy services was being planned for commissioning in 2023.

Sample size and sampling technique

A total of three hundred and ninety-nine patients living with cancer were screened for depressive disorders. Data was collected from the oncology unit. Mondays were for new patient evaluations, Tuesdays to Thursdays were for patients coming for subsequent reviews, while Fridays were for follow up of patients who had completed chemotherapy. All patients regardless of cancer type and cancer stage and willing to participate in the study formed the study population. The inclusion criteria were for patients aged 18 years and above with a histologically confirmed cancer diagnosis and those who had no apparent cognitive deficit. Patients were excluded if they who did not consent for the study and were not able to respond to the questions [8]. A semi-structured questionnaire was used for data collection. Nurses with no specialization in mental health collected data. The nurses underwent a five-day orientation workshop on screening and management of depression. Supervision and weekly meetings were conducted on regular basis by a team of experts to review and check for completeness, accuracy, and consistency of data collection.

Depressive symptom assessment scale

The study used a validated Chichewa language version of PHQ-9 as a screening tool to quantify probable major depressive disorder. This tool rated each of the nine questions as contained in the Diagnostic and Statistical Manual of Mental Disorders,5th edition (DSM-V) and had scores ranging from 0 to 3 to generate total score of range between 0 and 27 [11, 22]. The cut-off score of ≥ 9 in PHQ-9 in this study was used to identify the probable major depressive disorder based on the validation findings and recommendation in Malawi [21]. The recommendation from the validation findings indicated that the PHQ-9 cut-off value of ≥ 9 had a sensitivity of 85% and the specificity of 82% with an Area Under the ROC (receiver operating characteristic curve) Curve (AUC) value of 0.91 (95% CI, 0.88 to 0.94) in identifying probable major depressive disorder among participants [21]. Therefore, we classified patients who scored above 9 in PHQ-9 as having a probable major depressive disorder. We further classified the patients according to depressive symptom severity using the PHQ-9 score into minimal or no depressive symptoms (0 - 4), mild depressive symptoms (5 - 9), moderate depressive symptoms (10 - 19), and severe depressive symptoms (PHQ-9 score 20 - 27) [8, 21].

Data collection and data management

The questionnaire was piloted on some participants to estimate average time taken to complete a single interview as well as ascertaining the objectivity of the questionnaire. Data was collected using Open Data Kit (ODK) on android tablets to minimize data collection errors and reduce missing data. Data validations and checks were programmed to ensure that most data capture errors were solved at the data collection point. All data collected on the tablets were sent to a secure server and routine data quality checks were run on the server to identify any data inconsistencies and discrepancies. Data was downloaded from the server as a comma-separated values (CSV) dataset which was imported into Stata for further preparations and analysis. We used the STROBE cross sectional reporting guidelines for reporting observational studies [23].

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

14

Data analysis

We used Stata statistical software version 14 Texas 77845 for analysis. Our exposure variables included: socio-demographic characteristics, cancer type, cancer stage, cancer treatment modality, and intention of treatment for cancer. Probable major depressive disorder was the outcome variable.

Socioeconomic status was generated as a single explanatory variable using factor analysis of five variables namely: type of residence, house ownership, energy source; water source and type of toilet (flush toilet) because they were all indicators of socioeconomic profile and had ordinal entries. In factor analysis, total variance and assets that were more unequally distributed across the sample were given higher weights and were used to generate factor scores. The higher the score indicated the higher the wealth status and vice versa. Based on quintiles, the scores were converted into five ordered categories from highest (1st quintile) to lowest (5th quintile). Therefore, the new variable SES was categorized into those five categories namely, highest, higher, high, middle and low.

Correlational analyses were done to compare patients with cancer and depression. Chi-square test was used to assess the association between outcome and explanatory variables. We fitted an unadjusted logistic regression model to find the association between outcome and explanatory variables at 5% level. All significant explanatory variables were all fitted into multivariate logistic regression model using forward selection to determine factors significantly associated with chronic disease comorbidity at p<0.05. The model was tested for sensitivity by the forward selection procedure (e.g., including and excluding specific variables) with robust standard errors.

Patient and public involvement

Patients and the public were not involved in this study from development of the protocol, recruitment, data collection, analysis, interpretation and dissemination of these results.

Results

Socio-demographic and clinical characteristics of the study participants

Three hundred ninety-nine patients living with cancer were screened for depressive disorders with 255 (64%) females and 144 males. An equal proportion of patients were being managed with intention to cure (50%) versus palliative care (50%). Most patients (72%) had localized lesions. Overall, the prevalence of probable major depressive disorders in this study was 11.5%. Further socio-demographic and clinical characteristics of the study participants are shown in Table 1 below.

Characteristics	No probable major depressive disorder, n (%)	Probable major depressive disorder, n (%)	Total, n (%)	p-value[†]
	PHQ-9 (0-8)	PHQ-9 (9-27)	PHQ-9 (0-27)	
	N= 353 (88.47)	N=46 (11.53)	N=399 (100)	
Gender				
Male	126 (87.5)	18 (12.5)	144 (36.09)	
Female	227 (89.02)	28 (10.98)	255 (63.91)	0.648
Age				
18-25	23 (88.46)	3 (11.54)	26 (6.52)	
26-45	117 (84.78)	21 (15.22)	138 (34.59)	
46-64	150 (90.36)	16 (9.64)	166 (41.6)	
≥65	63 (91.3)	6 (8.7)	69 (17.29)	0.397

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

15

Marital status				
Single	35 (89.74)	4 (10.26)	39 (9.77)	
Married	215 (89.21)	26 (10.79)	241 (60.4)	
Divorced	46 (88.46)	6 (11.54)	52 (13.03)	
Widowed	57 (85.07)	10 (14.93)	67 (16.79)	0.814
Area of residence				
Rural	255 (89.16)	31 (10.84)	286 (71.68)	
Urban	98 (86.73)	15 (13.27)	113 (28.32)	0.493
Education level				
None	90 (92.78)	7 (7.22)	97 (24.31)	
Primary	156 (89.14)	19 (10.86)	175 (43.86)	
Secondary	85 (84.16)	16 (15.84)	101 (25.31)	
Tertiary	22 (84.62)	4 (15.38)	26 (6.52)	0.254
Employment				
Not employed	177 (91.24)	17 (8.76)	194 (48.62)	
Casual labourers	126 (85.71)	21 (14.29)	39 (9.77)	
Formal employment	32 (82.03)	7 (17.95)	147 (36.84)	
Student	5 (83.33)	1 (16.67)	6 (1.5)	
Retired	13 (100)	-	13 (3.26)	0.201
Socio-economic status				
Low	69 (87.34)	10 (12.66)	79 (19.8)	
Middle	61 (84.72)	11 (15.28)	72 (18.05)	
High	74 (91.36)	7 (8.64)	81 (20.3)	
Higher	75 (87.21)	11 (12.79)	86 (21.55)	
Highest	74 (91.36)	7 (8.64)	81 (20.3)	0.636
Cancer type				
Kaposi's Sarcoma	56 (87.5)	8 (12.5)	64 (16.04)	
Cervical cancer	117 (88.36)	15 (11.36)	132 (33.08)	
Esophageal cancer	15 (93.75)	1 (6.25)	16 (4.01)	
Breast cancer	31 (83.78)	6 (16.22)	37 (9.27)	
Other cancers	134 (89.33)	16 (10.67)	150 (37.59)	0.843
Cancer stage				
Localized	256 (89.51)	30 (10.49)	286 (71.68)	
Lymph node involvement	32 (86.49)	5 (13.51)	37 (9.27)	
Distant metastasis	65 (85.53)	11 (14.47)	76 (19.05)	0.579
Intention for treatment				
Curative	128 (84.21)	24 (15.79)	152 (50)	
Palliative	142 (93.42)	10 (6.58)	152 (50)	0.011*

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

16

Cancer duration (since diagnosis)				
< 1 year	236 (88.72)	30 (11.28)	266 (67.51)	
1-5 years	89 (89.9)	10 (10.1)	99 (254.13)	
6-10 years	16 (80)	4 (20)	20 (5.08)	
11-15 years	7 (87.5)	1 (12.5)	8 (2.03)	
> 15 years	1 (100)	-	1 (0.25)	0.778

* Denotes statistical significance at p-value <0.05 (p-values from Pearson's Chi-square correlation) and confidence interval of 95%. † Denote the p-values comparing two categories of patients with or without probable major depressive disorders at PHQ-9 cut-off value of 9.

Table 1: Socio-demographic and clinical characteristics of patients living with cancer by their probable depressive disorder status.

Severity of depressive symptoms among patients with probable major depressive disorders

Among patients with probable major depressive disorder as a diagnosis, 18 (39%) had mild depressive symptoms, 24 (52.17%) had moderate depressive symptoms and 4 (8.7%) had severe depressive symptoms as depicted in the figure 1.0.
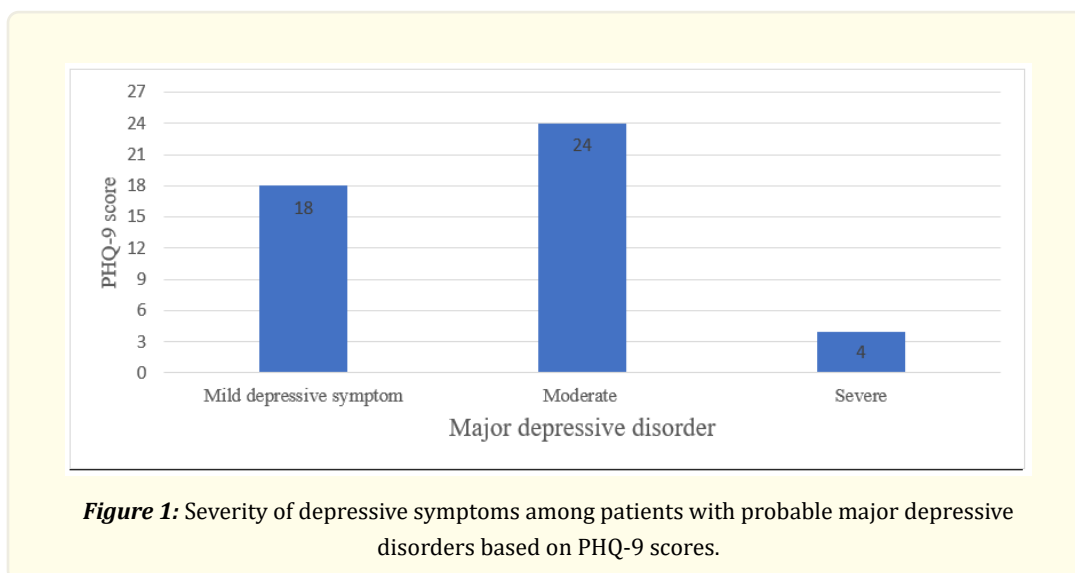

Figure 1: Severity of depressive symptoms among patients with probable major depressive disorders based on PHQ-9 scores.

Severity of depressive symptoms among the study participants

At least 55% of the participants in the study had depressive symptoms. Among those with depressive symptoms, 48% had mild form. The patient distribution according to the severity of depressive symptoms independent of diagnosis of probable major depressive disorder was shown in Table 2.

Severity of depressive symptoms	*PHQ-9 range*	*Frequency, N=399*	*Percent (%)*
No or minimal depressive symptoms	0-4	181	45.36
Mild depressive symptoms	5-9	190	47.62
Moderate depressive symptoms	10-19	24	6.02
Severe depressive symptoms	20-27	4	1

Table 2: Severity score for depressive symptoms based on PHQ-9 among study participants.

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

17

Correlates of probable major depressive disorders among patients living with cancer

Table 3 illustrated the correlation between probable major depressive disorder against various patients' sociodemographic and clinical characteristics. In a univariate regression model, the following characteristics were not associated with probable major depression disorder: gender, marital status, age, religion, education, socio-economic status, cancer type, cancer stage and years of living with cancer since diagnosis. In the adjusted model, only those being treated for palliative care, 0.36 (95% CI: 0.14-0.94) had significantly reduced odds of probable major depressive disorders.

Patient characteristics	Unadjusted OR (95% CI)	P-value	Adjusted OR (95% CI)	p-value
Gender				
Female	1.00		1.00	
Male	1.16 (0.61-2.18)	0.648	1.83 (0.13-5.42)	0.278
Education				
None	1.00		1.00	
Primary	1.57 (0.63-3.87)	0.331	0.89 (0.3-2.6)	0.827
Secondary	2.42 (0.95-6.17)	0.064	1.28 (0.37-4.17)	0.681
Tertiary	2.34 (0.63-8.69)	0.205	1.04 (0.16-6.74)	0.964
Employment				
Unemployed	1.00		1.00	
Casual labourers	1.74 (0.87-5.93)	0.092	1.07(0.43-2.67)	0.887
Formal employment	2.28 (0.88-3.42)	0.112	1.63 (0.41-6.41)	0.487
Student	2.08 (0.23-18.87)	0.514	-	-
Cancer type				
Kaposi's sarcoma	1.00		1.00	
Cervical	1.89 (0.4-3.511)	0.817	1.24 (0.27-5.71)	0.777
Esophageal	0.47 (0.05-4.03)	0.488	0.99 (0.09-10.93)	0.994
Breast	1.35 (0.43-4.26)	0.603	2.59 (0.54-12.44)	0.235
Others	0.84 (0.34.2.06)	0.697	0.76 (0.21-2.72)	0.677
Intention for treatment				
Curative	1.00		1.00	
Palliative	0.38 (0.17-0.82)	0.013*	0.36(0.14-0.94)	0.037*
Cancer stage				
Localized	1.00		1.00	
Lymph node involvement	1.33 (0.48-3.68)	0.579	0.99 (0.32-3.09)	0.993
Distant metastasis	1.44 (0.69-3.03)	0.332	1.19 (0.43-3.29)	0.731
Cancer duration				
<1 year	1.00		1.00	
1-5 years	0.88 (0.41-1.88)	0.749	0.72 (0.29-1.76)	0.473
6-10 years	1.97 (0.62-76.27)	0.253	1.52 (0.37-6.23)	0.564
11-15 years	1.12 (0.13-9.45)	0.914	0.54 (0.05-5.83)	0.619

* Denotes statistical significance at p-value <0.05, CI= Confidence Interval, UOR= Unadjusted Odds Ratio, AOR = Adjusted Odds Ratio.

Table 3: Correlates of probable major depressive disorders among patients living with cancer.

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

18

Discussion

Our study aimed at estimating the prevalence of probable major depressive disorders through active screening using a PHQ-9 tool. Although PHQ-9 was a screening tool, in our study, it was also used to quantify probable major depressive disorder because it was validated for major depressive disorder against the gold standard [Diagnostic and Statistical Manual of Mental Disorders,5th edition (DSM-V)] at defined cut-off value of 9 [21]. Thus the prevalence of probable major depressive disorder in this study (11.5%) was higher than the previously reported 9% using self-reports [12]. This might be a more accurate estimate considering that we used active screening approach rather than self-reports. Our estimates would be seen as lower than those among people living with diabetes mellitus (18%) and in general population in Malawi (30%) [24, 25]. This was because our study only focused on those with probable major depressive disorder which was narrow spectrum from a wider range of depression spectrum as reported in previous studies [24, 25]. However, in the current study, 55% of the participants had depressive symptoms which was significantly higher than any other reported estimates in our setting among any patient sub-groups or in general population [21, 24-28]. The cancer patients generally have a high prevalence of depression as reported in other similar studies and our findings are consistent with what has been observed in similar settings. Similar findings were also reported by other studies elsewhere despite using different cut-offs and screening tools [2, 4, 9, 29, 30]. This would indicate higher burden of depressive symptoms among those living with cancer hence it's clinical relevance in calling for routine screening for depressive symptoms among this sub-group of patients [1, 4, 6, 9, 31].

Our study reported that, among those with probable major depressive disorder, most clients (52%) had moderate depressive symptoms indicated on PHQ scale. This sub-group of patients were likely to progress easily to severe form of the disease if no appropriate intervention was given which could potentially leading to undesirable patient outcomes [1, 11]. In one study, more than 67% of those with minimal depressive symptoms would progress to severe form if unattended [1, 11]. Thus early detection and treatment of depressive symptoms among patients living with cancer had potential to reduce disease progression, increased survival rates, lower medical costs and improved quality of life [4].

In this study, most sociodemographic and clinical characteristics were not associated with probable major depressive disorders. Similar findings were also reported by Udedi et al, in Malawi using different patient sub-group [25]. Only patients being supported by palliative care had a significantly reduced odds of probable major depressive disorders (p<0.037). As a result of consistent psychosocial support provided by palliative care, patients likely accepted their disease more easily, understood their prognosis better and felt more supported as they dealt with a terminal diagnosis [32]. It was also likely that caregivers of patients on palliative care would have understood the disease better which could have prompted improved family psychosocial support [32, 33]. The findings of this study had underlined the importance of providing palliative care to the continuum of cancer care as it had shown to reduce depressive disorders [34]. Palliative care had been reported to improve the patients' quality of life and reduce their symptom burden [31, 34].

In this study, cancer stage and cancer types were not associated with probable major depressive disorders. This was contrary to most previously conducted studies which had reported significant associations [4, 8, 33, 35]. Our study was limited by recruitment of patients from a tertiary referral hospital which might have led to the selection of more economically well-off participants. Similarly, we could not establish the causal relationship between probable major depressive disorder and palliative care. However, to the best of our knowledge, this was the first study conducted to estimate probable major depressive disorders using PHQ-9 among patients living with cancer in Malawi and it provided valuable baseline data.

Conclusion

The study demonstrated a higher prevalence of probable major depressive disorders among patients living with cancer at Kamuzu Central Hospital in Lilongwe. This is consistent with the current knowledge where patients with illness like cancer experience depression. In our study, the patients on palliative care had reduced odds for depressive disorders. Integrating screening and management of depressive disorders as well as palliative care services among patients living with cancer would provide more comprehensive cancer

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

19

services in Malawi. Furthermore, the Malawi Ministry of Health through the NCC should consider use of therapeutic interventions for treatment of depression in cancer patients since there is evidence that methylphenidate and antidepressants provide therapeutic benefit for palliative care patients with depressive symptoms in other similar settings. The further research direction amongst the cancer patients may consider use of methylphenidate and antidepressants in combination, psychosocial counselling and music therapy in reducing depression amongst the cancer patients in Malawi or other similar settings.

References

1. Khalil A., et al. "Prevalence of Depression and Anxiety amongst Cancer Patients in a Hospital Setting: A Cross-Sectional Study". Psychiatry J (2016): 3964806.
2. Krebber AM., et al. "Prevalence of depression in cancer patients: a meta-analysis of diagnostic interviews and self-report instruments". Psychooncology 23.2 (2014): 121-30.
3. Walker ZJ and S Xue. "Depression, Anxiety, and Other Mental Disorders in Patients with Cancer in Low- and Lower-Middle-Income Countries: A Systematic Review and Meta-Analysis". JCO Glob Oncol 7 (2021): 1233-1250.
4. Ayalew M., et al. "Prevalence of depression and anxiety symptoms and their determinant factors among patients with cancer in southern Ethiopia: a cross-sectional study". BMJ Open 12.1 (2022): e051317.
5. Mejareh ZN., et al. "Global, regional, and national prevalence of depression among cancer patients: A systematic review and meta-analysis". Indian Journal of Psychiatry 63.6 (2021): 527-535.
6. Nikbakhsh N., et al. "Prevalence of depression and anxiety among cancer patients". Caspian J Intern Med 5.3 (2014): 167-70.
7. Walker J., et al. "Prevalence of depression in adults with cancer: a systematic review". Ann Oncol 24.4 (2013): 895-900.
8. Naser AY., et al. "Depression and Anxiety in Patients with Cancer: A Cross-Sectional Study". Front Psychol 12 (2021): 585534.
9. Khalil A., et al. "Prevalence of Depression and Anxiety amongst Cancer Patients in a Hospital Setting: A Cross-Sectional Study". Psychiatry journal (2016): 3964806-3964806.
10. Erbil N., et al. "High burden of depression among cancer patients on chemotherapy in University of Gondar comprehensive hospital and Felege Hiwot referral hospital, Northwest Ethiopia". Plos One 15.8 (2020): e0237837.
11. Melkam Alemayehu., et al. "A descriptive analysis of depression and pain complaints among patients with cancer in a low income country". PLoS ONE 13.3 (2018).
12. Banda JC and AS Muula. "Burden of chronic disease comorbidities among cancer patients at Queen Elizabeth and Kamuzu Central Hospitals in Malawi: an exploratory cross-sectional study". Pan Afr Med J 40 (2021): 167.
13. Natuhwera G, P Ellis and SW Acuda. "Women's lived experiences of advanced cervical cancer: a descriptive qualitative study". Int J Palliat Nurs 27.9 (2021): 450-462.
14. Korsten LHA., et al. "Factors associated with depression over time in head and neck cancer patients: A systematic review". Psychooncology 28.6 (2019): 1159-1183.
15. Meijer A., et al. "Depression screening and patient outcomes in cancer: a systematic review". PLoS One 6.11 (2011): e27181.
16. Mossie A, D Kindu and A Negash. "Prevalence and severity of depression and its association with substance use in Jimma, Southwest Ethiopia". Depress Res Treat (2016).
17. Razzak HA, A Harbi and S Ahli. "Depression: prevalence and associated risk factors in the United Arab Emirates". Oman Med J 34.4 (2019): 274-282.
18. Cundale K., et al. "Reframing noncommunicable diseases and injuries for the poorest Malawians: the Malawi National NCDI Poverty Commission". Malawi Med J 29.2 (2017): 194-197.
19. Msyamboza KP., et al. "Burden of cancer in Malawi; common types, incidence and trends: National population-based cancer registry". BMC Research Notes 5.1 (2012): 149.
20. Host KM., et al. "Kaposi's sarcoma in Malawi: a continued problem for HIV-positive and HIV-negative individuals". AIDS 31.2 (2017): 318-319.

The Prevalence and Correlates of Probable Major Depressive Disorder among Patients Living with Cancer at Kamuzu Central Hospital in Malawi: Across-sectional Study

20

21. Udedi M., et al. "The validity of the patient health Questionnaire-9 to screen for depression in patients with type-2 diabetes mellitus in non-communicable diseases clinics in Malawi". BMC Psychiatry 19.1 (2019): 81.

22. Regier DA, EA Kuhl and DJ Kupfer. "The DSM-5: Classification and criteria changes". World Psychiatry 12.2 (2013): 92-8.

23. Von Elm E., et al. "The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies". BMJ 335.7624 (2007): 806-8.

24. Udedi M. "The prevalence of depression among patients and its detection by primary health care workers at Matawale Health Centre (Zomba)". Malawi Med J 26.2 (2014): 34-7.

25. Udedi M., et al. "Detection and prevalence of depression among adult type 2 diabetes mellitus patients attending non-communicable diseases clinics in Lilongwe, Malawi". Int J Ment Health Syst 14.1 (2020): 79.

26. Stockton MA., et al. "The impact of an integrated depression and HIV treatment program on mental health and HIV care outcomes among people newly initiating antiretroviral therapy in Malawi". PLOS ONE 15.5 (2020): e0231872.

27. Udedi M. "Improving access to mental health services in Malawi".

28. Udedi M., et al. "Integrating depression management into HIV primary care in central Malawi: the implementation of a pilot capacity building program". BMC Health Services Research 18.1 (2018): 593.

29. Elghazali Bakhiet T, SM Ali and AM Bakhiet. "Prevalence of depression and anxiety among adult patients undergoing chemotherapy in Khartoum, Sudan: A cross-sectional study". Journal of Affective Disorders Reports 6 (2021): 100218.

30. Farrant L., et al. "Symptom prevalence and burden, and the risk of depression among patients with advanced cancer attending two South African oncology units". Ecancermedicalscience 16 (2022): 1349.

31. Kaasa S., et al. "Integration between oncology and palliative care: a plan for the next decade?". Tumori 103.1 (2017): 1-8.

32. Wondimagegnehu A., et al. "Depression and social support among breast cancer patients in Addis Ababa, Ethiopia". BMC Cancer 19.1 (2019): 836.

33. Abuelgasim KA., et al. "Depression and anxiety in patients with hematological malignancies, prevalence, and associated factors". Saudi Medical Journal 37.8 (2016): 877-881.

34. Agarwal R and AS Epstein. "The Role of Palliative Care in Oncology". Semin Intervent Radiol 34.4 (2017): 307-312.

35. Popoola AO and AO Adewuya. "Prevalence and correlates of depressive disorders in outpatients with breast cancer in Lagos, Nigeria". Psychooncology 21.6 (2012): 675-9.

Volume 7 Issue 2 August 2024