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PREVALENCE OF DEPRESSION AMONG WOMEN LIVING WITH BREAST CANCER IN SUB-SAHARAN AFRICA: A SYSTEMATIC REVIEW

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ABSTRACT – *Objective:* One of the main causes of cancer-related death in Sub-Saharan Africa (SSA) and the most common cancer among women globally is still breast cancer. In addition to its physical effects, the psychological burden – especially depression – is frequently overlooked and undertreated in the region. The aim of the study was to systematically review recent evidence on the prevalence and associated factors of depression among women diagnosed with breast cancer in SSA.

Materials and Methods: The PEO framework was used to conduct a systematic literature review of studies published between January 2011 and June 2025 in PubMed, MEDLINE, CINAHL, ScienceDirect, and the Cochrane Library. Quantitative, qualitative, and mixed-method studies evaluating depression in breast cancer patients in SSA were among the eligible studies. The JBI checklist for qualitative research and the Downs and Black checklist for quantitative studies were used for quality appraisal.

Results: Twelve studies met the inclusion criteria, 11 quantitative studies totaling 2,532 participants plus one qualitative study (n = 21), from Nigeria, Egypt, Ethiopia, Rwanda, Ghana, and Kenya. The greatest rates were seen in Ethiopia (66.6%) and Rwanda (67.7%), with reported prevalence of depression ranging from 25% to 67.7%. Advanced disease stage, unemployment, low educational attainment, a lack of social support, and the stigma associated with cancer in society were all important risk factors. Both treatment adherence and quality of life (QoL) were considerably lowered by depression.

Conclusions: Depression is highly prevalent among women with breast cancer in SSA, yet mental health screening remains limited. It is critical that routine mental health evaluations and psychosocial support be incorporated into oncology care. Policy solutions and personnel capability must be strengthened by governments and health systems to address the twin burden of depression and cancer.

KEYWORDS: Breast cancer, Depression, Mental health, Sub-Saharan Africa, Quality of life, Systematic review.

INTRODUCTION

Breast cancer continues to be the most common disease diagnosed in women globally and a major contributor to cancer-related mortality[1-3]. According to projections from around the world, the number of cases of breast cancer rose from 1.38 million in 2008 to 2.3 million in 2020, and the yearly death toll topped 680,000[4,5]. The burden has increased disproportionately in low- and middle-income nations, especially in Sub-Saharan Africa (SSA), where late presentation and restricted access to diagnostic and treatment services have resulted in poor results and an increasing frequency[6-9].

With survival rates as low as 15% compared to 73% in high-income countries, women in SSA frequently present with advanced-stage disease, despite advancements in awareness and early identification in some areas[10,11]. Delays in diagnosis, financial obstacles, a lack of qualified oncology specialists, and insufficient cancer control initiatives are some of the contributing reasons[12,13]. Women with breast cancer endure significant psychological anguish, particularly depression, in addition to physical suffering, which has a negative impact on treatment compliance and general quality of life[14-16].

Depression can appear at any stage of the disease and is known to be the most prevalent psychological comorbidity among cancer patients[17,18]. Numerous stressors, including financial pressure, loss of social duties, body-image alteration after mastectomy, and dread of mortality, may be the cause[19,20]. These difficulties are made worse in African environments with limited resources by cultural stigma and a dearth of psychosocial help[21-23]. Untreated depression has been linked to worse clinical outcomes, reduced coping skills, and increased mortality, according to evidence[24,25].

According to studies done in SSA, the prevalence of depression in patients with breast cancer varies, ranging from 25% to 68%[26-30]. However, it is challenging to determine the actual burden due to variations in study design, diagnostic methods, and demographic characteristics. Furthermore, there is no integration of new research that specifically addresses African women, who confront particular sociocultural and health-system obstacles.

Therefore, the goal of the current systematic review was to: (1) ascertain the prevalence of depression among breast cancer patients in Sub-Saharan Africa; (2) identify key factors linked to depressive symptoms; and (3) evaluate the effect of depression on patients' quality of life and treatment results. To facilitate the integration of mental health support into cancer services across SSA, this evaluation will synthesize evidence published between January 2011 and June 2025 and offer insights specific to each region.

MATERIALS AND METHODS

Study Design

In accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 criteria, this study used a systematic review design[31]. Because of its organized, transparent, and repeatable procedures for locating and synthesizing relevant evidence, a systematic review methodology was used[32,33]. The goal of the study was to compile the results of primary research on the prevalence of depression and its contributing factors among women in SSA who have breast cancer.

Framework and Research Question

The literature search and selection process was guided by the PEO framework (Population, Exposure, Outcome)[34].

- Population (P): Women residing in Sub-Saharan African countries diagnosed with breast cancer;
- Exposure (E): Breast cancer diagnosis and/or treatment;
- Outcome (O): Depression or depressive symptoms.

The research question was as follows: What is the prevalence of depression among women with breast cancer in Sub-Saharan Africa, and what are the main determinants influencing it?

Search Strategy

A thorough search of studies published between January 2011 and June 2025 was conducted across six main databases: PubMed, MEDLINE, CINAHL, ScienceDirect, Cochrane Library, and PsycINFO. African Journals Online (AJOL) and Google Scholar were used to investigate grey literature. Medical Subject Headings (MeSH) were used to create the search phrases, which were then concatenated with the Boolean operators "AND" and "OR". The following were important search terms: AND ("depression" OR "depressive symptoms" OR "psychological distress") AND ("Sub-Saharan Africa" OR "African women" OR "women of color") AND ("breast cancer" OR "breast neoplasm" OR "carcinoma of the breast"). Prior to

being replicated in other databases, the search approach was tested in PubMed. Additional acceptable publications were found by manually screening the reference lists of the included research.

Eligibility Criteria

Predetermined inclusion and exclusion criteria were used to choose the studies (Table 1). Only primary, peer-reviewed papers that used mixed-methods, quantitative, or qualitative approaches were included.

Table 1. Inclusion and exclusion criteria.

Criteria	Inclusion	Exclusion
Population	Women in SSA diagnosed with breast cancer	Men with breast cancer or women outside SSA
Exposure	Diagnosis and/or treatment of breast cancer	Other cancers or unrelated health conditions
Outcome	Depression or depressive symptoms	Anxiety, stress, or unrelated mental disorders
Study type	Quantitative, qualitative, or mixed cohort, cross-sectional, or RCT	Reviews, editorials, commentaries, or duplicates
Language	English	Non-English publications
Publication period	2011-2025	Studies published before 2011

Regional Scope Note

One of the included studies was carried out in Egypt (North Africa), despite the fact that the target region was SSA[26].

Study Selection

To eliminate duplicates, all of the recovered records were exported into EndNote 21. Abstracts and titles were compared to the inclusion criteria by two impartial reviewers. Eligibility was then verified by full-text screening. By reaching an agreement with a third reviewer, disagreements were settled. Figure 1 provides a summary of the selection procedure (PRISMA flowchart).

Quality Appraisal

The Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Qualitative Research[36] was used to evaluate qualitative studies, and the Downs and Black checklist[35] was used to evaluate quantitative studies. Two reviewers independently evaluated each manuscript, with ratings of ≥75% indicating good methodological quality.

Data Extraction and Synthesis

Data on authors, year, country, sample size, study methodology, depression assessment tool, and prevalence estimates were gathered using a structured data extraction form. Descriptive analysis and table summarization were performed on the extracted data. A bar chart was created by synthesizing quantitative data on prevalence (Figure 2). Thematic analysis was used to identify common factors associated with depression in the qualitative data.

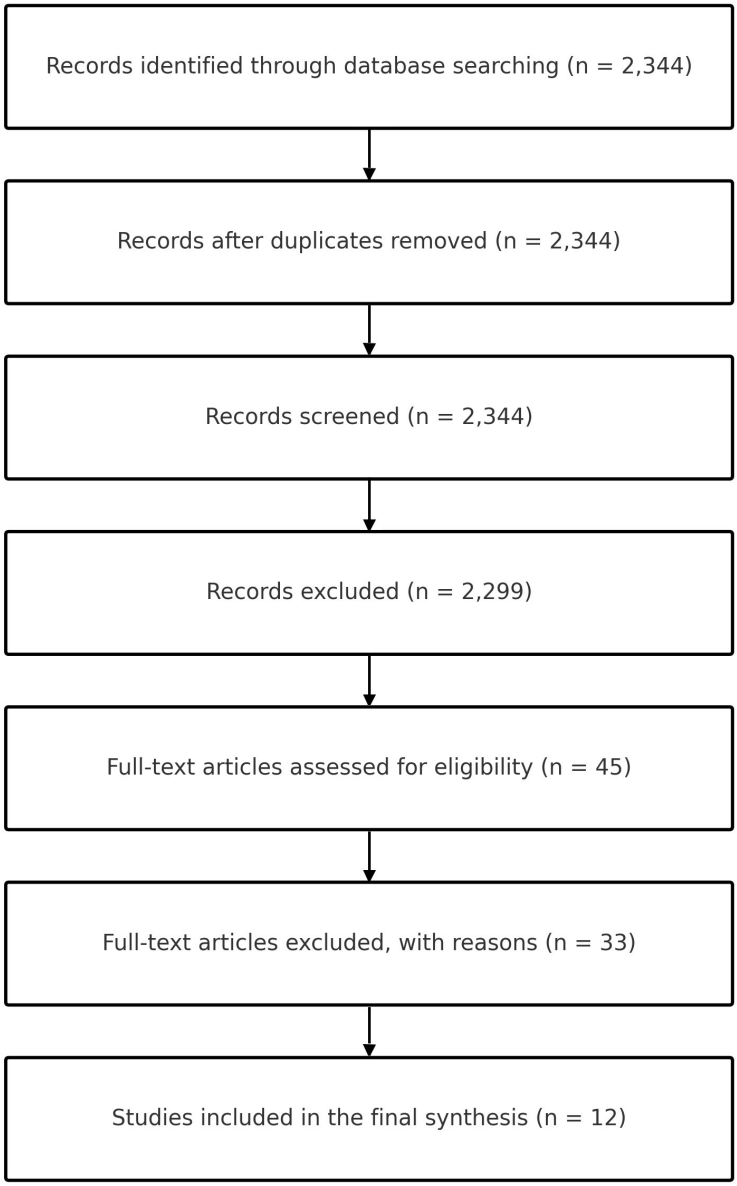

Figure 1. PRISMA 2020 flow diagram of study selection. Records identified through database searching (n = 2,344); records screened after duplicate removal (n = 2,344); records excluded at title/abstract (n = 2,299); full-text articles assessed for eligibility (n = 45); full-text articles excluded with reasons (n = 33); studies included in the final synthesis (n = 12).

RESULTS

STUDY SELECTION

After screening additional grey literature sources using AJOL and Google Scholar, the database search initially produced 2,344 entries from PubMed, MEDLINE, CINAHL, ScienceDirect, the Cochrane Library, and PsycINFO. 45 articles underwent full-text screening after duplicate and irrelevant records (n = 2,299) were eliminated. Twelve papers were retained for final analysis after quality evaluation and eligibility review (Figure 1): eleven quantitative and one qualitative.

Study Characteristics

The twelve (12) included studies contained 2,532 quantitative participants (plus one qualitative research, n = 21) from six countries: Rwanda (2), Ghana (2), Nigeria (1), Egypt (1), Kenya (1), and Ethiopia (4 studies). Cross-sectional (n = 10), cohort (n = 1), and qualitative (n = 1) study designs were used.

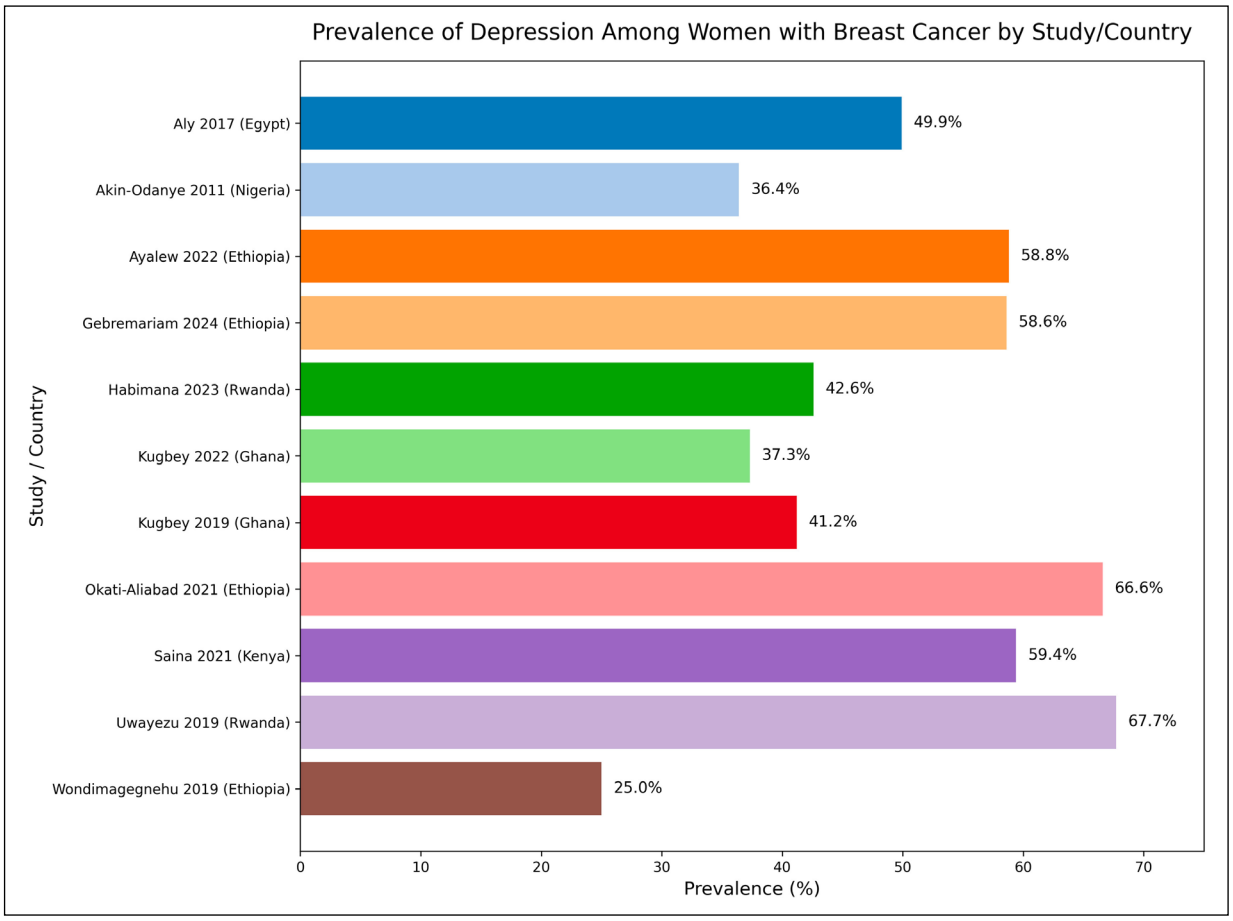

Figure 2. Prevalence of depression among women with breast cancer by study/country. Bar chart showing reported prevalence (%) across included studies: Aly 2017 (Egypt) 49.9; Akin-Odanye 2011 (Nigeria) 36.4; Ayalew 2022 (Ethiopia) 58.8; Gebremariam 2024 (Ethiopia) 58.6; Habimana 2023 (Rwanda) 42.6; Kugbey 2022 (Ghana) 37.3; Kugbey 2019 (Ghana) 41.2; Okati-Aliabad 2021 (Ethiopia) 66.6; Saina 2021 (Kenya) 59.4; Uwayezu 2019 (Rwanda) 67.7; Wondimagegnehu 2019 (Ethiopia) 25.0.

Two Ghanaian studies (Kugbey 2019[21] and Kugbey 2022[30]) were conducted in the same environment and used samples of the same size (n = 205). Upon closer examination, they focus on rather distinct psychosocial outcomes while using the same underlying population. We did not interpret them as independent prevalence estimates in any pooled calculations in our review; instead, we viewed them as supplementary analyses of a single Ghanaian cohort (Table 2).

Prevalence of Depression

The reported prevalence of depression in women with breast cancer in SSA ranged from 25.0% to 67.7% throughout the analyzed studies. Overall, the findings suggest that approximately one in two women has clinically significant depression symptoms; the vast heterogeneity in study-specific estimates and measurement methodologies precluded a formal meta-analysis. Nigeria (36.4%) and Ghana (37.3%) had lower estimates, while Rwanda (67.7%) and Ethiopia (66.6%) had the highest percentages.

Factors Associated with Depression

Across studies, unmarried status (single, divorced, or widowed)[37,41], unemployment/financial hardship[38,42], advanced cancer stage and treatment toxicities[26,43], low social support and suboptimal communication[44-46], and cultural/religious factors that may promote fatalistic coping[47,48] were important determinants (Table 3).

Table 2. Characteristics of included studies.

Author (Year)	Country	Study design	Sample size	Depression measure	Prevalence (%)
Aly et al[26] (2017)	Egypt	Cross-sectional	96	Beck depression inventory	**49.9**
Akin-Odanye et al[37] (2011)	Nigeria	Cross-sectional	33	Hospital anxiety and depression scale	**36.4**
Ayalew et al[22] (2022)	Ethiopia	Cross-sectional	415	HADS	**58.8**
Gebremariam et al[27] (2024)	Ethiopia	Cross-sectional	333	PHQ-9	**58.6**
Habimana et al[39] (2023)	Rwanda	Cross-sectional	425	HADS	**42.6**
Kugbey et al[30] (2022)	Ghana	Cross-sectional	205	HADS	**37.3**
Kugbey et al[21] (2019)	Ghana	Cross-sectional	205	HADS	**41.2**
Okati-Aliabad et al[23] (2021)	Ethiopia	Cross-sectional	201	PHQ-9	**66.6**
Saina et al[25] (2021)	Kenya	Cross-sectional	79	HADS	**59.4**
Uwayezu et al[29] (2019)	Rwanda	Cross-sectional	96	HADS	**67.7**
Wondimagegnehu et al[20] (2019)	Ethiopia	Cohort	444	CES-D	**25.0**
Iddrisu et al[19] (2020)	Ghana	Qualitative	21	Thematic interview	–

Table 3. Determinants of depression among women with breast cancer (summary of associations).

Factor	Studies supporting association	Direction
Older age	Ayalew et al[22]; Gebremariam et al[27]; Habimana et al[39]	↑ depression
Marital status (single/widowed)	Akin-Odanye et al[37]; Habimana et al[39]	↑ depression
Unemployment	Saina et al[25]; Aly et al[26]	↑ depression
Advanced stage disease	Okati-Aliabad et al[23]; Habimana et al[39]	↑ depression
Low social support	Kugbey et al[21,30]; Uwayezu et al[29]	↑ depression
Religious fatalism	Iddrisu et al[19]; Cebeci et al[48]	↑ depression

Qualitative Findings

According to the qualitative study by Iddrisu et al[19], the main causes of depression and social disengagement are mastectomy-related deformity, alopecia, and body image disruption. Prayer, hope, and family involvement are examples of active coping that promoted improved adjustment.

Summary of Evidence Quality

Three quantitative studies were graded as moderate, one as low, and eight as high quality (≥75%). According to JBI criteria, the qualitative investigation showed sufficient reliability, confirmability, and credibility.

DISCUSSION

In line with pooled estimates from LMIC meta-analyses, this review demonstrates that about half of women in SSA who have breast cancer also suffer from depressive symptoms[49-51]. Rates are higher than those usually seen in high-income nations (10-25%)[52,53], which is probably due to late presentation, a lack of psychosocial support, and the lack of systematic screening in oncology clinics[54-56]. Heterogeneity in the depression measures utilized (HADS, PHQ-9, BDI, CES-D), as well as variations in cut-off scores and assessment schedules, are likely contributing factors to the significant variation in prevalence estimates between studies. These tools vary in their focus, ranging from screening for probable depressive disorder to symptom intensity, and they do not evaluate the same constructs. This measurement variability hinders direct comparability between studies and was a primary reason why a formal meta-analytic pooling of prevalence was not done.

Psychological load was exacerbated by cultural stigma and socioeconomic limitations (poverty, unemployment)[42,57-60]. Higher depression scores were consistently associated with treatment-related variables, specifically advanced stage and adverse effects of chemotherapy[43,66-69]. Modifiable health-system levers were highlighted by the protective effects of social support and good clinician-patient communication[40,44-46,70-74].

Implications for Oncology Practice in SSA

Early diagnosis and referral may be improved by incorporating short, validated screening instruments (e.g., HADS, PHQ-9) into routine oncology visits[75,76]. According to WHO guidelines, oncology teams should be trained in basic psychosocial care, and multidisciplinary models involving social workers and psychologists should be strengthened[77-79]. Help-seeking and adherence may be further enhanced by anti-stigma education at the community level. Beyond routine screening and psychosocial counselling, accumulating evidence supports the role of adaptive physical activity and multidisciplinary integrative medicine in lowering depressed symptoms and enhancing quality of life among breast cancer patients. Structured, supervised exercise can be used as part of early rehabilitation to enhance mood and functional recovery, as demonstrated by recent work, such as the FENICE trial protocol on fencing as an adapted physical activity in non-metastatic breast cancer[80]. Likewise, multicenter studies of integrative medicine approaches combining standard oncological therapy with nutritional support, mind-body therapies, and targeted physical activity reveal improvements in overall well-being and psychological outcomes. While such initiatives are not yet widely available in SSA, they offer a good framework for context-appropriate, resource-sensitive therapies that can be adapted to local settings and delivered through existing cancer and rehabilitation services[81].

Strengths and Limitations

A region-focused synthesis and the incorporation of both quantitative and qualitative evidence are among its strong points. Measurement heterogeneity, featuring the use of multiple depression instruments (HADS, PHQ-9, BDI, CES-D) and varying diagnostic thresholds, likely contributed to between-study heterogeneity and precluded direct comparison of prevalence estimates.

We included one excellent study from Egypt (North Africa) despite our target region being Sub-Saharan Africa, given its scientific soundness and contextual relevance to oncology care in African settings. However, its inclusion slightly broadens the geographical coverage outside SSA, and the conclusions should be interpreted with this constraint in mind.

CONCLUSIONS

Among women in SSA who have breast cancer, depression is prevalent and clinically significant. To improve quality of life and treatment outcomes, routine mental health screening, increased psychosocial support, and policy-level investment in psycho-oncology are crucial. Longitudinal designs and culturally appropriate therapies ought to be given top priority in future studies.

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The authors declare no conflicts of interest.

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Informed Consent and Ethics:
Not applicable. This study is a systematic review based on previously published data and did not involve direct patient contact or the collection of new human participant data.

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Data Availability:
All data generated or analyzed during this study are included in this published article.

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