



# BMJ Open Availability, accessibility and activation of mental health services among university students in Africa: a protocol of a mixed-methods systematic review with meta-analysis and meta-synthesis

Hesborn Wao <sup>1</sup>, Melvin A Wao <sup>2</sup>, Ian Muriithi,<sup>2</sup> Paul Seraii,<sup>2</sup> Jackline Syonguvi<sup>1</sup>

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<sup>1</sup>Research and Related Capacity Strengthening (RRCS), African Population and Health Research Center (APHRC), Nairobi, Kenya  
<sup>2</sup>School of Pharmacy and Health Sciences, United States International University - Africa (USIU-A), Nairobi, Kenya

## Correspondence to

Dr Hesborn Wao;  
[hwao@aphrc.org](mailto:hwao@aphrc.org)

## ABSTRACT

**Introduction** In Africa, the prevalence of mental health problems is higher among university students than in the general population. A number of systematic reviews and recent prevalence studies have focused on prevalence of mental health issues among college. This mixed-methods systematic review, including meta-analysis and meta-synthesis, will explore: what mental health services are available to university students; the extent to which students access available services and factors associated with service access; and the degree to which students activate (use) accessible services and factors associated with service activation.

**Methods and analysis** We will conduct electronic literature search of the following databases: PubMed, Cochrane Library, Semantic Scholar, ERIC, Trip Database, Medline and PsycINFO. Disagreement, if any, will be resolved by a third reviewer. Two reviewers will independently assess the methodological quality of included studies using relevant tools. For cross-sectional studies, we will use the Joanna Briggs Institute Checklist for Analytical Cross Sectional Studies whereas qualitative or mixed-methods studies will be assessed using the Critical Appraisal Skills Programme. OR, risk ratio or mean difference with 95% CI will be considered as the effect size. We will assess heterogeneity between studies by appropriate subgroup analyses. Publication bias will be detected using funnel plots.

**Ethics and dissemination** Ethical clearance is not required as we are not collecting primary data. Findings will be disseminated via relevant scientific conferences and peer-reviewed publications.

**PROSPERO registration number** CRD42022296870.

## INTRODUCTION

According to a multidisciplinary international survey,<sup>1</sup> the vast majority of people with expertise in the field of mental health from eight countries prefer to define mental health as ‘the capacity of each and all of us to feel, think, and act in ways that enhance our ability to enjoy life and deal with the

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This systematic review and meta-analysis will assess the availability, accessibility and activation of mental health services among college students in Africa.
- ⇒ Expanded search of seven databases and use of snowballing technique are likely to minimise risk of missing relevant studies.
- ⇒ The systematic review and meta-analysis will adhere to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.
- ⇒ To minimise the likelihood of reviewer bias, two reviewers will screen for study eligibility and assess the methodological quality of included studies.
- ⇒ Other potential limitations of this study may include low number of studies that meet inclusion criteria, variation in the instruments used to measure mental health outcomes, and methodological quality of included studies.

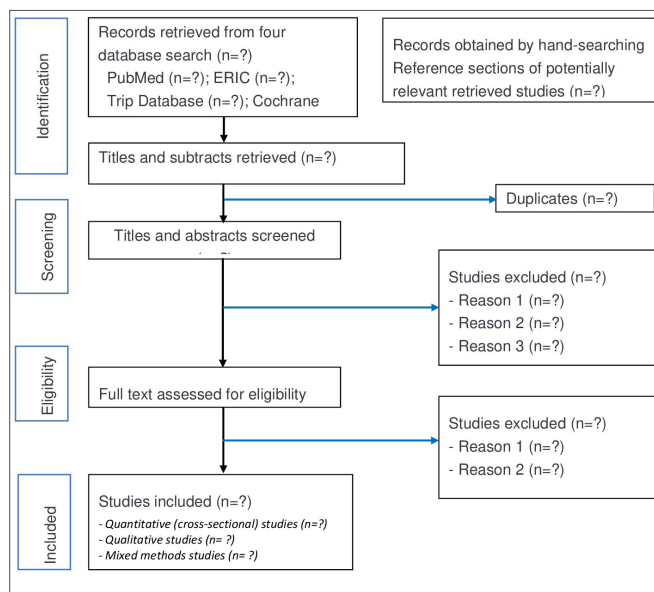
challenges we face. It is a positive sense of emotional and spiritual well-being that respects the importance of culture, equity, social justice, interconnections and personal dignity.<sup>2</sup> In Africa, there is an increasing concern about mental health, for example, whereas the continent’s population grew by almost half (49%) between 2000 and 2015, the number of years lost to disability resulting from mental and substance use disorders increased by 52%.<sup>3</sup> Research shows that the prevalence of mental health-related problems is higher among university students than in the general population.<sup>4</sup> Globally, almost one-third (31%) of university/college students screened positive for a mental health disorder.<sup>5</sup> A systematic review of prevalence of depression among university students in low-income and middle-income countries found that 24.4% of students suffer from

mental health-related problems.<sup>3</sup> One systematic review and meta-analysis showed that over one-third of university students in Ethiopia suffer from common mental disorders.<sup>6</sup> A systematic review of mental health and well-being among medical students in Nigeria showed varying prevalence estimate for different disorders (psychological distress: 25.2%, perceived stress: 60.5%, depression: 33.5% and anxiety: 28.8%).<sup>7</sup> A systematic review of prevalence of depression among university students in low-income and middle-income countries found a lower prevalence (24.4%).<sup>8</sup>

Studying the prevalence of mental health problems among college students in Africa is important, and this has been the focus of a number of systematic reviews<sup>6–11</sup> and prevalence studies.<sup>12–18</sup> Even more important is understanding what mental health services are available to university students, the extent to which they access available services, and the degree to which they activate (se) accessible services. Bantjes *et al* noted that patterns of mental health service activation by students depend on the accessibility of the services.<sup>19</sup> However, students can only access services that are available to them.

With respect to availability of mental health services, a cross-sectional survey of mental health literacy among undergraduate students of the University of Nigeria found poor mental health literacy among students.<sup>20</sup> Regarding accessibility, a study assessing the prevalence and determinants of help seeking and sources of help sought by Jimma University undergraduate students found that 58.4% of them had common mental disorders of which 78.4% sought help for the problem (accessed) although majority (83.8%) did so from informal sources.<sup>21</sup> With regard to activation, a WHO Mental Health Surveys from 21 countries found a 12-month service utilisation rate of only 16.4% among college students with mental disorders.<sup>22</sup> Regarding service activation, a study on mental healthcare utilisation among first-year university students at two universities in South Africa found a 12-month service utilisation rate of 28.9% among students with mental disorders.<sup>19</sup> A study in Kenya found that much fewer men than women (8.5% vs 91.5%) use counselling services, perhaps for fear of violating masculine ideologies.<sup>20</sup> These findings show that data with respect to availability, accessibility and activation of mental health services by university students in Africa are rare and inconclusive.

Using a mixed-methods approach, including meta-analysis and meta-synthesis, this systematic review seeks to answer three research questions: (1) What mental health services are available to university students in Africa? (2) To what extent do the students access available services and what factors influence service access? (3) To what extent do the students activate accessible services and what factors influence service activation? Understanding availability, accessibility and activation of mental health services and associated factors is imperative as mental health disorder is a significant predictor of educational attainment throughout the entire educational career.<sup>22–23</sup>



**Figure 1** PRISMA flow diagram detailing our search and selection process. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-analyses.

## METHODS

### Patient and public involvement

To develop the research questions, we conducted a stakeholder consultation with volunteer students who either have dealt with mental health issues or know a student who has had such experience. A psychologist who provided feedback on the research questions has also agreed to provide us a forum to share our findings. No patients will be involved in this study.

### Study design and data sources

This protocol adheres to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) standards.<sup>24</sup> We will conduct a systematic search of published studies from PubMed, ERIC, Cochrane Library, Trip database, Semantic Scholar, Medline and PsycINFO. All studies conducted in sub-Saharan Africa (SSA) between January 2000 and February 2022, regardless of the study design, will be included. In addition, a rerun of the search will ensue when the full review is completed. Detailed search process will be presented using PRISMA flow diagram (figure 1). We plan to start the study on 1 May 2022 and complete it by 1 October 2022.

### Definition of variables

In the context of this review, a mental health problem refers to mental distress; mental disorder; depression, depressive symptom, dysthymia or their combinations; anxiety; stress; psychological distress or related terms used in mental health literature. Mental health service refers to an intervention, therapy, care, treatment or social support aimed at addressing mental health problem. Availability of mental health service refers to existence of the service whether it is accessed or not. Mental health service may be available at a facility (eg, hospital, health centre or

clinic) on-campus or off-campus or it may be in the form of mental health information. Accessibility of mental health service refers to the extent to which students seek the service regardless of whether it is received or not. Activation of mental health service refers to actual use of the service, for example, receiving psychological counselling therapy.

### Search strategies

The search strategy in PubMed will be as follows: ((university student\*) OR (college student\*)) AND ((depression [MeSH Terms]) OR (depressive symptoms [MeSH Terms]) OR (depressive disorder [MeSH Terms]) OR (dysthymia [MeSH Terms]) OR (mental disorder [MeSH Terms]) OR (mental distress) OR (anxiety [MeSH Terms]) OR (stress) OR (psychological distress)) OR (primary care) OR (secondary care) AND ((availability of health services [MeSH Terms]) OR (accessibility of health services [MeSH Terms]) OR (access to health care [MeSH Terms])) OR (health care utilization [MeSH Terms]) OR (health service utilization [MeSH Terms]) OR (treatment seeking [MeSH Terms])) AND (Africa [MeSH Terms]) NOT (child\*). In Cochrane Library and ERIC, we will use the terms, “Mental Health AND Africa” whereas “Mental Health AND Africa AND student\*” will be used in Trip Database. We will use search terms, “Mental health” AND (“college” OR “university”) AND (student\*) AND “Africa\*” AND “access\*” AND “health-seeking” in Semantic Scholar. In addition, we will use the snowballing technique whereby reference lists of retrieved studies are manually examined and additional articles added if they meet the inclusion criteria. Given the paucity of mental health studies focusing on availability, accessibility or access among university students in Africa, we will not restrict the search by language or year of publication.

### Inclusion and exclusion criteria

#### Participants

Any study including students enrolled in a postsecondary or tertiary institutions (university or college) in Africa will be included. A multicounty study will be included provided data on African institution are extractable. Studies focusing on general population, children or refugees will be excluded.

#### Intervention and/or comparator

We will include any study examining an intervention aimed at improving psychological distress, stress, depressive and/or anxious symptoms. In addition, interventions that address general aspects of psychological well-being such as sleep and include a primary mental health outcome will be included. Generally, we will include a study on mental health intervention if it focuses on availability, accessibility or activation aspects.

#### Outcomes

We will include any study reporting availability, accessibility (or health-seeking) or activation (utilisation or

use) of mental health service by university students in Africa. Studies will not be excluded based on how they measured mental health, for example, help seeking for mental illness (eg, psychosis, suicide and substance use disorder) will be included but depression with comorbid medical illness, substance use and other psychiatric illnesses will be excluded.

### Study design

A quantitative, qualitative or mixed-methods study is eligible for inclusion provided it focuses on availability, access or activation of mental health service among university students in Africa.

Search results will be uploaded into EndNote V.X9 reference management software to facilitate removal of duplicate studies. Next, two team members will review the retrieved studies using a two-step screening process. First, they will independently screen the titles and abstracts of remaining studies against the inclusion criteria to determine broad eligibility. The retained studies will be identified as either ‘include’ or ‘unclear’ by either reviewer. Next, the two reviewers will independently screen full text of all retained studies against the eligibility criteria. In the last step, disagreements regarding study inclusion or exclusion will be resolved by discussion until a consensus reached between the two reviewers. Where necessary, a third reviewer will mediate the discussion to resolve disagreement.

### Data extraction and management

Because this review reports on both quantitative and qualitative findings, separate extraction methods will be used for each. Data from included studies will be extracted and managed in Google Form. Two coders will independently extract the required data from each included study using two sets of pilot-tested data extraction forms.

Data will be extracted on author’s name; year of publication; country (location of study); research type (quantitative, qualitative or mixed-methods research); study design (cross-sectional, randomised control trial (RCT), cohort, qualitative, etc); setting (college vs university); level (undergraduate vs graduate; year in college: first vs second vs third vs fourth); discipline/field of study (medicine, engineering, nursing, etc); age of participants (mean, SD, median or range); sample size (broken down by gender, age); gender (male, female, both), research type (qualitative, quantitative); mental health service focus (availability, accessibility, or activation, or a combination of these); mental status at selection (diagnosed or not), sample size (for target variable); mental health outcome (depression, anxiety, stress, etc), assessment method/tool used to diagnose the mental issue (case vignette, International Classification of Diseases (ICD-10), Patient Health Questionnaire (PHQ-9), Beck Depression Inventory (BDI-21), etc); factors associated with availability, accessibility or activation of mental health service (eg, barriers or

facilitators presented as themes or items listed). Thus, for each study, data will be independently extracted by two coders and any discrepancies between them discussed until consensus reached or a third reviewer arbitrate.

### Quantitative data extraction

The studies in this review are likely to use varying methods and measures. To accommodate this heterogeneity, multiple approaches will be used to extract quantitative data. Where numerical data are available in text or tables, we will extract descriptive statistics, correlations (for continuous outcomes), OR or risk ratio (for binary outcomes) and a list of key findings. Numerical data from figures will be extracted either manually (eg, with a ruler) or by using software such as PlotDigitizer that digitises the data points off the figure using the axes and scales set by the users. To strengthen the quality of our data, we will extract unadjusted and adjusted data and present them separately. Important findings not reported using quantitative measures will be extracted from the results sections of relevant papers and thematically content analysed.

### Qualitative data extraction

Consistent with the meta-ethnographic method, we will extract reported data from both results and discussion sections and subject these to thematic analysis.

### Assessment of methodological quality

Two reviewers will independently assess the methodological quality of included studies using relevant tools. For cross-sectional studies, we will use the Joanna Briggs Institute Checklist for Analytical Cross Sectional Studies. This tool contains eight items, each scored using a four-point scale. However, if all items are applicable, we will use a three-point scale (yes='+', no='-', can't tell='?'). For qualitative studies or mixed-methods studies, we will use the Critical Appraisal Skills Programme (CASP). CASP tool contain 10 items, each scored using a three-point response scale (yes='+', no='-', can't tell='?'). RevMan V.5.3 software will be used to graphically present results of methodological quality of included studies (figure 2).

### Data analysis and synthesis

#### Quantitative data analysis

Extracted data will be entered into an MS Excel for use in conventional pairwise meta-analysis using Stata V.16.1 (StataCorp). We will present frequencies and percentages of the constructs measured, the tools used and whether basic descriptive statistics (M and SD) or proportions are reported. To meta-analyse categorical data, we will compute risk ratio or OR and 95% CIs. For continuous data, we will use mean difference (MD). Meta-analysis will be conducted with a random effects model. If outcome variables are measured on different scales, data will be synthesised by using Hedge g of standardised MD with 95% CIs. The meta-analyses results

JBI Checklist for analytical cross sectional studies	
1.	Were the criteria for inclusion in the sample clearly defined?
2.	Were the study subjects and the setting described in detail?
3.	Was the exposure measured in a valid and reliable way?
4.	Were objective, standard criteria used for measurement of the condition?
5.	Were confounding factors identified?
6.	Were strategies to deal with confounding factors stated?
7.	Were the outcomes measured in a valid and reliable way?
8.	Was appropriate statistical analysis used?
CASP screening questions for assessing methodological quality of qualitative studies	
1.	<b>Aim:</b> Was there a clear statement of the purpose of the research?
2.	<b>Methodology:</b> Is a qualitative method appropriate?
3.	<b>Design:</b> Was the research design appropriate to address the aims of the research?
4.	<b>Recruitment:</b> Was the recruitment strategy appropriate to the aims of the research?
5.	<b>Data:</b> Was the data collected in a way that addressed the research issue?
6.	<b>Relationship:</b> Has the relationship between the researcher and participants been adequately considered?
7.	<b>Ethics:</b> Have ethical issues been taken into consideration?
8.	<b>Rigorous:</b> Was the data analysis sufficiently rigorous?
9.	<b>Findings:</b> Is there a clear statement of the results?
10.	<b>Valuable:</b> Does the study contribute to valuable existing knowledge in research?

**Figure 2** Assessing risk of bias in included cross-sectional or qualitative/mixed-methods studies. CASP, Critical Appraisal Skills Programme; JBI, Joanna Briggs Institute.

will be presented in forest plots provided there are at least two studies with meta-analyzable data. Where data are not meta-analyzable, we will describe the findings narratively. If both bivariate and multivariate statistical analyses are performed for one factor, we will rely on the results from the higher model (multivariate test). Where possible, all effect sizes will be transformed into a common metric in order to make them comparable across studies. Extracted unadjusted and adjusted outcomes will be pooled and summarised separately. Heterogeneity across studies will be evaluated using Cochran's  $I^2$  statistics whereby  $I^2$  values of 25%, 50% and 75% are considered as low, moderate and high heterogeneity, respectively.

We will perform subgroup analysis and meta-regression to assess the source of the heterogeneity, and the potential influence of included characteristics of the studies on the pooled effect size. Given that positive and negative results may not be equally likely to get published, where more than 10 studies are included, we will use the funnel plot with Egger's test to test publication bias by checking the symmetry of a funnel plot. If publication bias is found, then the trim-and-fill method will be used to both identify and correct the asymmetry of funnel plot. If there are fewer than 10 studies, we will use trim-and-fill analysis. If significant heterogeneity is detected across studies, we will perform subgroup analysis using a random effects model according to the following variables: type of university (public vs private), student population (programme/discipline vs mixed) and mental health assessment method/tool used (case vignette, ICD-10, PHQ-9, BDI-21, etc). Sensitivity analysis will be performed to investigate whether removal of a single study would have an effect on the heterogeneity of total measurements in each meta-analysis. All two-tailed  $p < 0.05$  will be defined as statistical significance.

#### Qualitative data analysis

We will use thematic analytic methods to analyse the qualitative data. We will take a critical realist

epistemological stance that brings together an analysis reflecting meaningful patterns from the data. Our meta-synthesis will be interpretative rather than aggregative. Our coding will be line by line, open and complete, creating a thematic map. That is, we will group and regroup codes into meaningful patterns and compare across studies to identify patterns and contradictions. To inductively create and refine themes, the thematic map will be reviewed in consultation with other authors.

### Mixed-methods approach

Given that our goal is to answer the review questions by synthesising the findings from both quantitative and/or qualitative studies, we will adopt an integrated approach involving the use of both quantitative and qualitative methods to answer the same question and draw a synthesised conclusion. Because different analysis approaches are likely to be used for the quantitative and qualitative data, these will be initially reported separately but integrated by highlighting similarities and/or differences.

### Ethics and dissemination

Because we are not collecting primary data, ethical clearance is not required for this study. We plan to disseminate study findings internationally by presenting at relevant scientific conferences and through publication in a peer-review journal in the field of mental health.

## DISCUSSION

College and university students are at high risk of experiencing mental health issues than the general population. Majority of studies have focused on quantifying the prevalence of mental health issues among students. This review will document what mental health services are available to university students, the extent to which students access available resources, and the degree to which accessible resources are activated. In addition, it will illumine our understanding of factors that are associated with access and activation of mental health services by college students.

Potential limitations of this review might include heterogeneity of the studies included. While we plan to conduct subgroup analysis, some analyses may not be feasible owing to reduced number of applicable studies. Lastly, only published studies that are accessible through Internet search will be included because of the limited resource to pay for non-open access papers. However, we will contact authors to share with us a copy of the article as well as search via ResearchGate.

To our knowledge, this mixed-methods systematic review, including meta-analysis and meta-synthesis, will be the first to examine what mental health services are available to university students; the extent to which students access available services; the degree to which

students activate (use) accessible services; and factors associated with service accessibility and activation.

**Contributors** HW and MAW conceptualised and designed the protocol, drafted the initial manuscript and reviewed the manuscript. HW, IM, PS and JS defined the concepts and search items, data extraction process and methodological appraisal of the studies. MAW and JS planned the data extraction and statistical analysis. HW and MAW provided critical insights. All authors approved and contributed to the final written manuscript.

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**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to Methods section for further details.

**Patient consent for publication** Not applicable.

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### ORCID iDs

Hesborn Wao <http://orcid.org/0000-0002-6823-0895>

Melvin A Wao <http://orcid.org/0000-0003-4633-9491>

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