Bibliometric Analysis of Psychological Distress Among Higher Learning Students in Africa

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Abstract
This bibliometric study explores research trends, collaborative networks, and thematic focus areas within the field of psychological distress among higher education students in Africa. It offers a comprehensive overview of recent scholarly contributions, identifying key researchers, institutions, and publication patterns. A total of 877 empirical studies were retrieved from the Dimensions database using predefined search criteria. After a rigorous screening and eligibility assessment, 264 studies met all inclusion criteria and were included in the final analysis. Using VOSviewer 1.6.20 software, the study conducted network analyses and generated data visualizations to map research collaborations and thematic developments. The University of Cape Town and Addis Ababa University emerged as leading institutions in publishing research on psychological distress in Africa. Notably, countries such as South Africa, Ethiopia, Canada, Ghana, Kenya, and Uganda demonstrated high levels of international research collaboration in this domain. Keyword analysis revealed that the research is strongly tied to broader issues concerning societal, health, and psychological well-being. Thematic analysis identified several core research clusters, including the epidemiology of psychological distress, the impact of the COVID-19 pandemic, and mental health challenges among university students. Citation analysis further highlighted the most influential authors, institutions, and publication sources, offering deeper insights into the field's academic landscape. This study provides critical insights into the evolution of research on psychological distress among higher education students in Africa, emphasizing key trends, collaborative patterns, and thematic developments that can inform future research and policy initiatives.

Keywords: *Psychological distress, citation analysis, mental distress, mental health, academic distress, social distress, higher learning students*

Introduction

Psychological distress has become a critical focus of contemporary research due to its rising prevalence globally and the substantial impact it has on individuals and communities. The growing complexities of modern life—marked by socioeconomic hardships and environmental stressors—have been strongly linked to the rising prevalence of psychological distress (Mboya *et al*., 2020a). It is estimated that approximately 30% of the global population experiences psychological distress annually, with one in four individuals likely to face mental health-related issues, including psychological distress (WHO, 2020). The concept of psychological distress has been defined in diverse ways across scholarly literature. Xu and Zhu (2023) conceptualize it as an array of unpleasant emotional states elicited by psychological, social, or spiritual factors, encompassing experiences that range from normal emotional fluctuations to more severe conditions such as anxiety, depression, and personality disturbances. Mboya *et al*., (2020) describe it as the unpleasant emotions experienced when an individual is overwhelmed, which can severely disrupt daily activities. Viertiö *et al*. (2021) identify it as a non-specific manifestation of stress, anxiety, and depression. Meanwhile, the American Psychiatric Association (APA, 2022) provides a broader conceptualization of psychological distress, describing it as an undifferentiated constellation of symptoms that includes anxiety, depression, functional impairments, personality traits, and behavioural issues However, the widely accepted definition includes a spectrum of negative emotional experiences, such as stress, anxiety, and depression, often resulting from adverse life events or ongoing stressors (APA, 2013).

Prevalence rates of psychological distress vary significantly across countries. Approximately 31% of the global population experience elevated levels of psychological distress (Naylor, 2022), with students reporting higher rates than the general population (Mboya *et al*., 2020). In Africa, for instance, South Africa reports a prevalence rate of 28% (Pilla & Edward, 2019), Ghana 21%, Somalia between 21.6% and 49.1%, and Tunisia 36% (Kondirolli & Sunder, 2022). A study by Mboya *et al*. (2020a) further highlights a 46% prevalence rate of psychological distress, underscoring the gravity of the issue. Manifestations of psychological distress are diverse and include substance abuse, academic underperformance, decreased productivity, and antisocial behaviour among the university students (Bantjes *et al*., 2017). Common symptoms of psychological distress identified in the literature include loss of interest in usual activities, excessive worry, and fear, all of which can disrupt daily functioning (Auerbach *et al*., 2018). Factors contributing to the prevalence of psychological distress include economic hardship, illness, natural disasters, challenges in intimate relationships, academic pressures, and family-related problems (Mboya *et al*., 2020a).

The etiology of psychological distress is multifactorial and context-dependent. Research highlights several contributing factors, including inadequate adjustment to college life among students, economic disadvantage, social isolation, and academic pressure (Alipio, 2020; Gust *et al*., 2017; Hersi *et al*., 2017). Studies conducted in Africa have identified unique determinants, including gender, lower income, lack of close friendships, work tension, loneliness, and disease-related challenges (Muna & Atinkut, 2018; Rweyemamu, Mbotwa & Mramba 2024). These factors collectively impact individuals' cognitive, emotional, and social functioning, exacerbating psychological distress.

Despite extensive evidence on the causes of psychological distress, studies consistently find that students are disproportionately affected compared to the general population (Sifunda *et al*., 2024; Rweyemamu, Mbotwa & Mramba 2024; Mutinta, 2022). Most research efforts on psychological distress in Africa have been concentrated in countries such as South Africa, Ethiopia, and Ghana, leaving many other regions underrepresented. There remains a notable gap in empirical research on psychological distress, particularly among higher education students in several African contexts (Mboya *et al*., 2020b). This scarcity of comprehensive data may lead to underdiagnoses and inadequate intervention strategies, leaving affected populations vulnerable. To bridge this gap, this study conducted a bibliometric analysis as an emerging methodological approach for synthesizing existing literature and uncovering research trends. Bibliometric analysis utilizes mathematical and statistical methods to assess large bodies of scholarly literature, offering valuable insights into authorship patterns, institutional contributions, and emerging thematic trends (Xu & Zhu, 2023).

This study employed bibliometric methods to evaluate the scholarly output on psychological distress within African contexts, focusing on the contributions of journals, institutions, authors, and nations in advancing knowledge of psychological distress in Africa. Thus, the aim of this study was to identify key research trends, scholarly contributions, and gaps in the literature on psychological distress within African contexts, with a particular focus on higher education students. This is because the effort made on this area focused on general psychological issues, such as depression, anxiety, academic stress, and psychological challenges faced by caregivers and medical students (Losioki & Hemed, 2021; Mboya *et al*., 2020b; Mutinta, 2022). A recent study by Fadiji *et al*. (2024) explored positive psychology and well-being in Africa, yet research explicitly addressing psychological distress remains limited. This study identified key trends, research priorities, and influential contributors in the field of psychological distress by analysing

literature from the Dimensions database using VOSviewer 1.6.20 software. The findings aim to enhance the understanding of community mental health in Africa and support the development of evidence-based interventions to address psychological distress. Guided by a central research question—What are the trends of empirical research on psychological distress among higher education students in Africa as identified through bibliometric analysis? — this study provides a comprehensive overview of the current scholarly landscape.

Methods and Materials
This study employed bibliometric analysis to systematically evaluate research trends on psychological distress in Africa, specifically focusing on higher-learning students. Analysis was done on the data obtained from the dimension database accessed in August 2024. Bibliometric analysis was chosen to enable a comprehensive assessment of scholarly output, including the frequency of occurrence of key terms, authorship networks, institutional contributions, country-level research productivity, and citation impact. The study focused on research articles published between 2018 and 2024, with the rationale being to assess how the COVID-19 pandemic influenced research patterns and to identify shifts in scholarly attention toward psychological distress among African students. Through bibliometric analysis, the study effectively mapped the evolution of psychological distress as a research domain, revealing key thematic areas, collaboration networks, and influential scholarly contributions. This approach provides an empirical foundation for understanding the scholarly landscape and informing future research directions.

The search strategy was conducted using a scientific database known as Dimensions, a digital scientific platform that includes published scholarly electronic content, research analytic features, and citations. Dimensions was chosen because it is more than just a citation database. It is an integrated research ecosystem that provides deeper coverage and insights into research impact, funding, and collaboration. Bibliometric analysis is particularly valuable for policy analysis, funding tracking, and the discovery of open-access research. The Dimensions database facilitated this study by providing rich contextual search capabilities and visualizations of large datasets, including citation counts per publication (García-Sánchez *et al*., 2019). The keywords employed in the search of data were "psychological Distress" OR "mental distress" OR "psychological stress" OR "mental health" AND "university students" OR "higher learning students" "Africa." The search was limited to open-access articles, allowing the authors to access full journal articles than only reading and reviewing the title and abstract. The researchers conducted a thorough deliberation to assess any article potentially

eligible for inclusion before finalizing the review. The Dimensions database was instrumental in filtering studies based on predefined inclusion and exclusion criteria. Only research articles that met these criteria were selected, as they provided rigorous empirical evidence crucial for capturing the broader trends of psychological distress in Africa. Other types of documents—such as books, book chapters, monographs, and conference proceedings—were excluded from the analysis to ensure consistency and methodological rigor. To enhance understanding of the data, researchers conducted a systematic skimming of all the included articles. They focused on the abstract to get the main idea of each study, the introduction to understand the research problem and objectives, the methodology to assess the study's relevance, the results and discussion sections to identify key findings, and the conclusion to capture final takeaways and recommendations.

Inclusion and exclusion criteria

The data included studies on psychological distress that were related to the following content areas: Health sciences, human society, public health, education, education policy, sociology and philosophy, and education systems. The inclusion and exclusion criteria considered the summarised information in Table 1.

**Table 1**
Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Accessibility	Empirical articles only that are open access	Closed access empirical articles
Publication type	Articles that are peer-reviewed	Monographs, thesis, proceedings book chapters and all other papers coming out from reputable journals
Publication years	Articles published between 2018 to 2024	All article published before 2018 and after 2024
Language of article	All articles written in English language	The article is reported in different languages other than English
The focus of the articles	Empirical Articles focusing on psychological distress in Africa	Articles not focusing of psychological distress in Africa
Place where the research was conducted	Empirical articles from Africa	Empirical studies conducted in other continents than Africa

Source: Researchers' Conceptualization (2024).

Process flow chart of the systematic review

The process of selecting the articles for review for this study considered Preferred Reporting Items for Systematic Reviews and Meta-Analyses

(PRISMA) (Page *et al*., 2021) PRISMA enhances the clarity, transparency, and reproducibility of systematic reviews and meta-analyses as shown in Figure 1
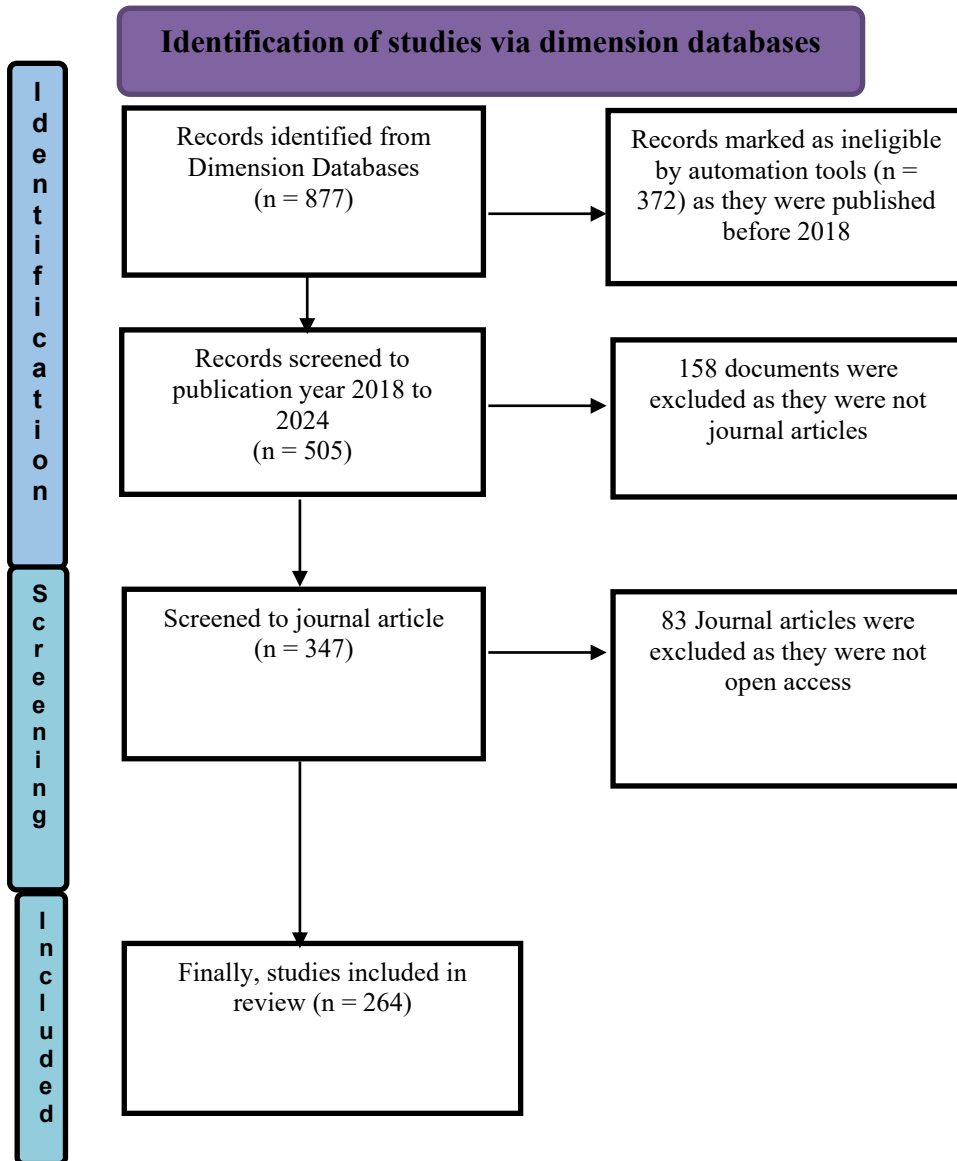
Source: Researchers' conceptualization (2024)

Figure 1 presents a flow diagram illustrating the bibliometric screening process, which consisted of three key stages. The first stage, *Identification*, involved collecting a large number of records from the Dimensions database. The second stage, *Screening*, entailed the removal of duplicate records and an initial relevance assessment based on the titles and abstracts of the studies. The final stage, *Inclusion*, involved selecting studies that met all predefined criteria for inclusion in the final analysis or review. Generally, the figure visually summarises how the total records were filtered down to the final set for research or study purposes.

Data analysis procedures
The VOSviewer 1.6.20 software was employed to analyse the bibliometric data from the dimensions' database, focusing on network and overlay visualisations. The analysis examined authors and co-authors, identifying the most influential researchers and their collaborative networks. It also assessed institutional productivity, determining which organisations contributed the most to the research field. Additionally, the study explored country-wise research output, mapping global contributions and highlighting international collaborations among researchers. Furthermore, citation and co-citation analyses were employed to identify influential studies and foundational literature in the field. The software also visualised collaboration networks by clustering authors, institutions, and countries based on their co-authorship connections. The total link strength metric was used to quantify the intensity of these collaborations, offering insights into the strength and extent of academic partnerships. This analysis offered a comprehensive view of research trends, key contributors, and the structure of scholarly communication across different regions and institutions.

Results
This section presents the findings of the bibliometric review on research trends related to psychological distress in Africa. It highlights the most highly cited authors, organizations, and countries; identifies countries with the strongest publication linkages; examines co-authorship patterns among highly collaborative nations; and provides a detailed analysis of frequently used keywords.

Trends in research about psychological distress in Africa
The analysis of all African research on psychological distress among higher education students found that this field of study in Africa can be divided into three phases. The results revealed that the first phase, from 2018 to 2020 was characterised by a moderate level of research productivity in this area. More research is needed compared to the other years. The second phase, lasting

from 2020 to 2023, showed an explosive increase in publications, with most associated with psychological distress and COVID-19. The final phase of the analysis is set in 2024, during which a decline in the number of publications on psychological distress was observed. However, it is important to acknowledge that this study was conducted before the end of 2024, and there remains the possibility of an increase in publications by year's end. Figure 2 presents a summary of the observed publication trends.

Figure 2: Number of publications per year
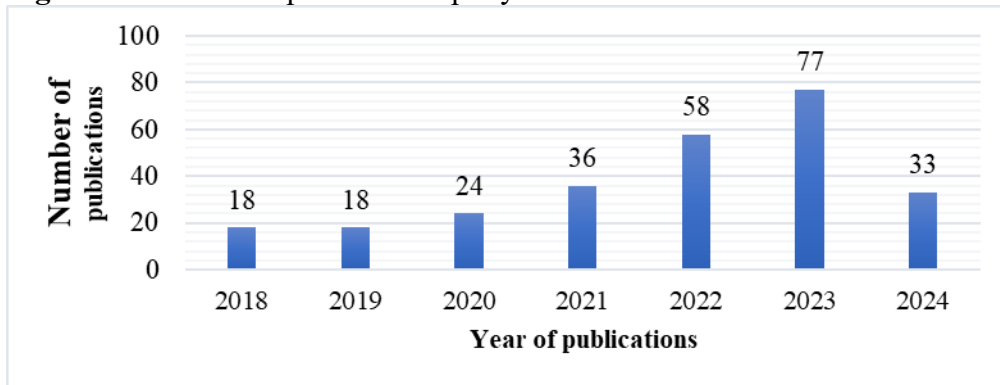
Authors with the highest citation on psychological distress

The citation analysis was done by reflecting on the minimum number of 3 citations per authors. The unity of analysis for this section involved authors who have conducted studies on psychological distress among higher learning students. Out of 1437 authors, Thornicroft and Grahame had the highest number of citations, totaling128. Table 2 summarises the findings by showing each author's number of documents, citations, and total link strength.

Table 2
Authors with the Highest Citation Link

Author	Documents (Empirical articles)	Citations	Total link strength
Thornicroft, graham	7	128	17
Hanlon, charlotte	18	93	27
Lund, crick	4	93	3
Njim, tsi	3	92	0
Badu, eric	4	65	9
Mitchell, rebecca	3	57	9
Fekadu, abebaw	6	54	14
Tekola, bethlehem	3	47	6
Ben-ezra, menachem	3	41	0
Hyland, philip	3	41	0
Karatzias, thanos	3	41	0

Shevlin, mark	3	41	0
Wagenaar, bradley h.	3	37	0
Grant, jonathan	3	33	16
Votruba, nicole	3	33	16
Howard, louise m.	3	32	12
Jidong, dung ezekiel	3	29	0
Myers, bronwyn	3	16	18
Sorsdahl, katherine	4	16	18
Adjorlolo, samuel	3	15	0
Eaton, julian	3	13	0
Demissie, mekdes	3	11	10
Hahn, judith a.	3	9	0
Teferra, solomon	3	7	5
Akena, dickens	3	6	0
Mulushoa, adiyam	3	6	14
Alem, atalay	3	4	2
Hoekstra, rosa a.	3	4	0

Source: Researchers' conceptualization (2024)

As shown in Table 2, authors such as Thornicroft, Hanlon, Charlotte, and Lund lead in number of citations, signifying their substantial contributions to the field of psychological distress in Africa. To provide further explanations, this study also traced the authors with the highest citation links, and the findings are illustrated in the network visualisation of authors in Figure 3.

Figure 3: Network visualisation of authors with the highest links and citations about psychological distress
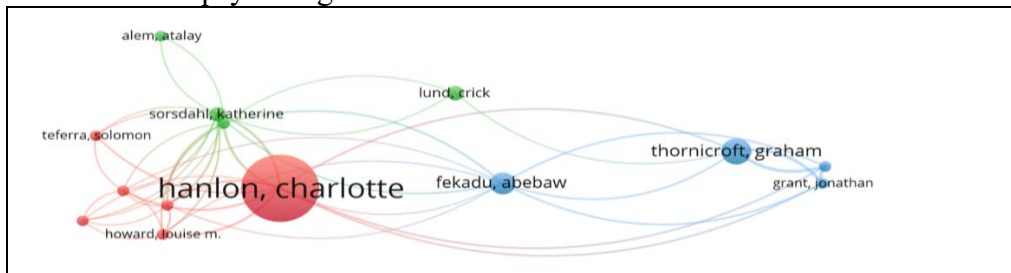

As shown in Figure 3, Thornicroft, Graham, and Hanlon Charlotte have highest citation links, implying that they may have been frequently published in high-impact journals, consequently leading to broader exposure. Furthermore, Thornicroft and Grahame have extensively collaborated with numerous authors, enhancing their visibility and increasing cross-referencing in related scholarly works. In contrast, authors with lower citation counts may face limited access to research resources, tend to publish in lower-impact or less widely read journals, or focus on niche topics with a more limited audience.

Organisations with the highest citation

The study analysed organizations with the highest number of citations to determine which institutions have made the most significant contributions to the body of knowledge on psychological distress through collaborative research. The unit of analysis in this part was organizations, and only those with a minimum of three citations were considered. Among the 572 organizations that met the inclusion criteria, only 71 surpassed the established significance threshold. Further analysis revealed that while 39 organizations met the threshold, only 26 exhibited the strongest citation links, highlighting their central role in collaborative research on psychological distress. Additional results regarding these interconnected links are presented in Figure 4.

Figure 4: Overlay visualization of organizations with the highest citation
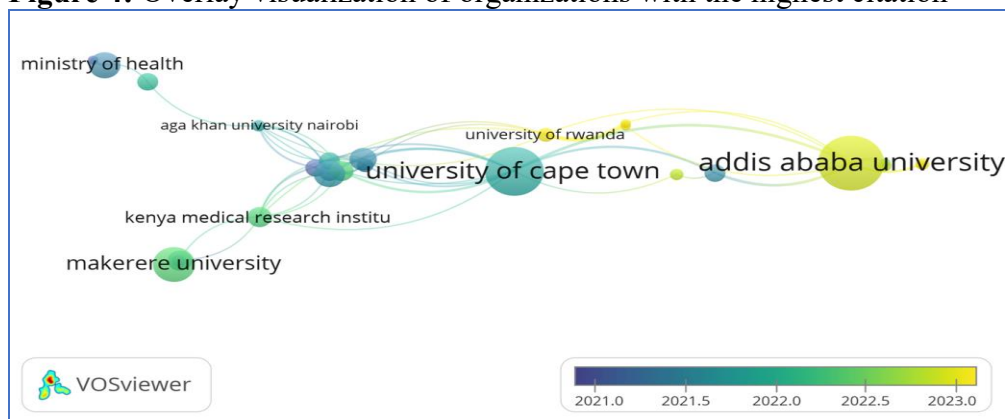
This analysis revealed that Addis Ababa University had the highest number of citations, followed by the University of Cape Town, Makerere University, the Ministry of Health, and Kenya Medical Research Institute. In 2023, documents originating from Addis Ababa University received a high number of citations, whereas in 2022, publications from the University of Cape Town were among the most highly cited.

Countries with highest publications/links on psychological distress in Africa

The analysis on this theme aimed to identify countries with the highest publication output and strongest collaborative patterns in the field of psychological distress among higher education institutions in Africa. The study included only countries with a minimum of five documents, resulting in 72 countries meeting the inclusion threshold. The summary of the findings is presented in Table 3.

Table 3:
Countries with higher publications and links to psychological distress

Country	Documents	Citations	Total link strength
South Africa	58	189	66
Ethiopia	27	236	17
Ghana	20	172	7
Kenya	20	20	16
Uganda	19	110	14
Nigeria	17	116	10
Zimbabwe	9	429	9
Zambia	6	132	8
Rwanda	5	292	6
Egypt	5	228	3

Source: Researchers' conceptualization (2024)

The findings in Table 3 indicate that South Africa has the leading publications by 58 documents with almost 66 collaborative links compared to the 5 documents from Egypt, which had only 3 collaborative patterns. South Africa's leadership in publications reflects its advanced research infrastructure and funding capabilities, underscoring disparities in African research capacity. The increased availability of internet access and advancements in science and technology have contributed to the growth of research on psychological distress. However, as shown in Table 3, some countries with fewer publications have accumulated higher citation counts than those with larger publication volumes. For instance, Zimbabwe, despite having only nine publications, has garnered 429 citations, suggesting that its research is both impactful and highly relevant to the African context. Figure 5 presents a summary of those countries with high citation despite their few publications they have.

Figure 5: A country with a higher citation on psychological distress in Africa
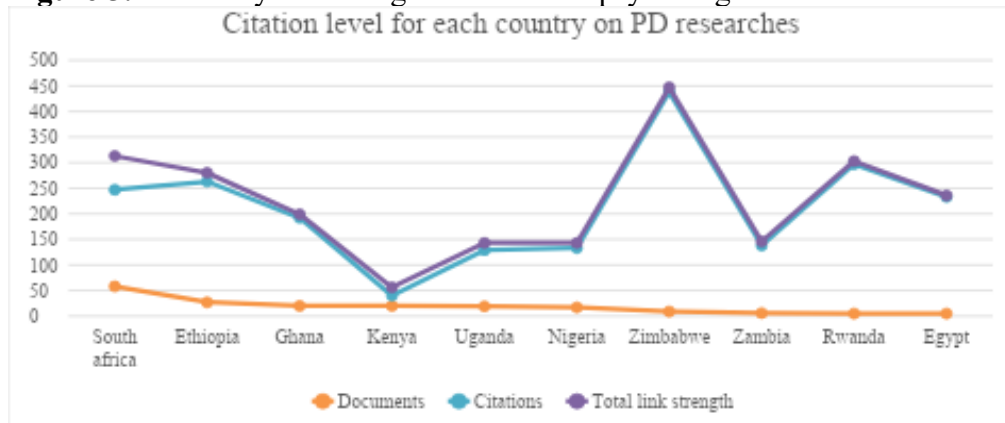
The findings in Figure 4 show that Zambian publications are highly cited as compared to South Africa, which has a high level of publications. An analysis was conducted using network visualization to trace the most prominent countries with high publication output on psychological distress among higher education students in Africa. South Africa manifested a leading publication as can be observed in findings summary presented in Figure 5.

Figure 5: Network visualisation of the popular country in Africa with higher publications
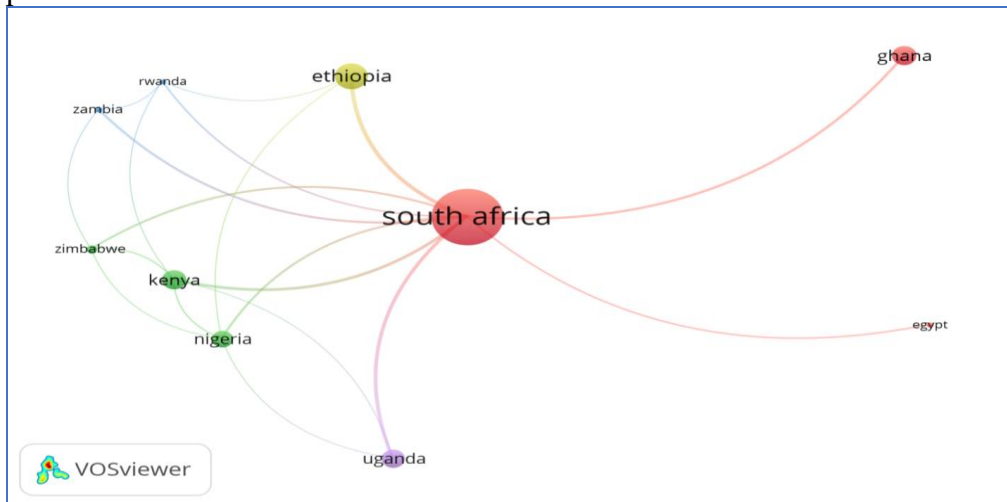
Co-authorship among countries with high collaboration on psychological distress

This section examines the co-authorship networks among countries that demonstrate high levels of collaboration in research on psychological distress. The analysis highlights inter-country partnerships and identifies regions contributing significantly to the collective knowledge on this topic within higher education contexts in Africa. These scholars investigated number of psychological related topics about African. Thus, this study acknowledges the contributions of these countries and their researchers. A default threshold was set, requiring a minimum of five and a maximum of 25 documents per country. Out of the 72 countries analysed, only 22 met this criterion, highlighting the concentrated nature of scholarly output in this field (see Figure 6).

**Figure 6:** Network visualisation of the country with higher co-authorship on psychological distress
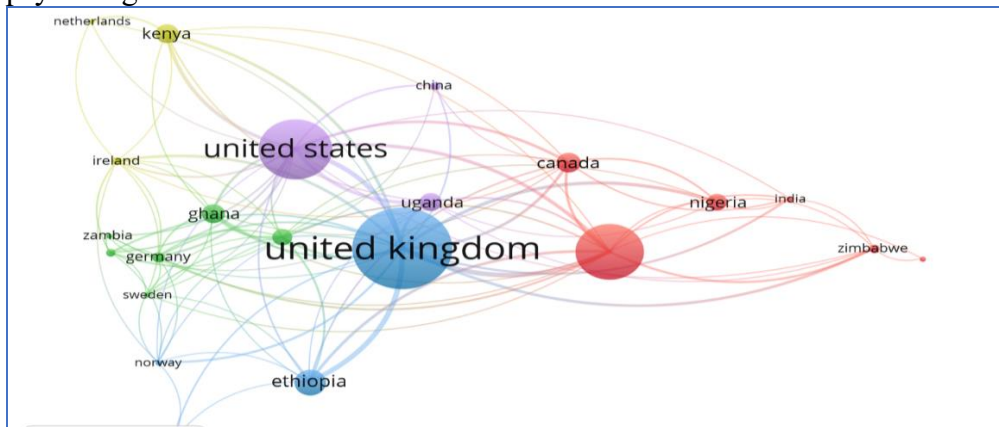
with a high number of publications on psychological distress also demonstrated elevated levels of co-authorship. Notably, the analysis revealed that the majority of reviewed studies involved collaborations with authors based outside the African continent. The network visualization further showed stronger collaborative ties with developed countries than among African nations themselves. This means that researchers or institutions in the studied context collaborate more frequently with institutions from developed countries, which may imply that the field of psychological distress is less emphasized in Africa than in developed countries. The patterns relating to how countries collaborate to research psychological distress have been grouped in colours, nodes, links and clusters. The United States and the United Kingdom had the largest nodes and are centrally located in the network, indicating they are major players and have extensive collaborations with many other countries in Africa. The thick lines connecting these nodes represent strong co-authorship links among countries such as the United Kingdom, Ghana, Ethiopia, Kenya, Nigeria, and Canada. The network visualization also reveals distinct clusters of countries, indicated by colour and spatial proximity, suggesting regional or institutional collaboration patterns in psychological distress research. For example, there seems to be a cluster involving the UK, Nigeria, Canada, and India. Another cluster might involve the US, Ireland, Netherlands, and Germany. Peripheral Countries: Countries like Zimbabwe and Sweden have smaller nodes and are located on the periphery, suggesting fewer collaborations in this network. Findings also show that African countries collaborate much more with the United Kingdom and the United States than how they collaborate among themselves.

Most cited sources on psychological distress

The study analysed 264 empirical research articles, which originated from 157 different sources, each contributing at least one document. Further

analysis revealed that 73 of these sources met the criterion of having a minimum of five citations. Among the 73 sources that reached this citation threshold, only 47 were found to be interconnected, indicating active citation relationships within a smaller subset of the scholarly community. The overlay visualisations presented in Figure 7 include 47 items, 22 clusters, 68 links, and 85 total-strength links. Notably, the yellow areas in the graph highlight sources associated with more recently cited research papers, indicating emerging interest and relevance. The findings from this analysis are summarized in Figure 7, which follows.

Figure 7: Overlay visualization of the most cited sources
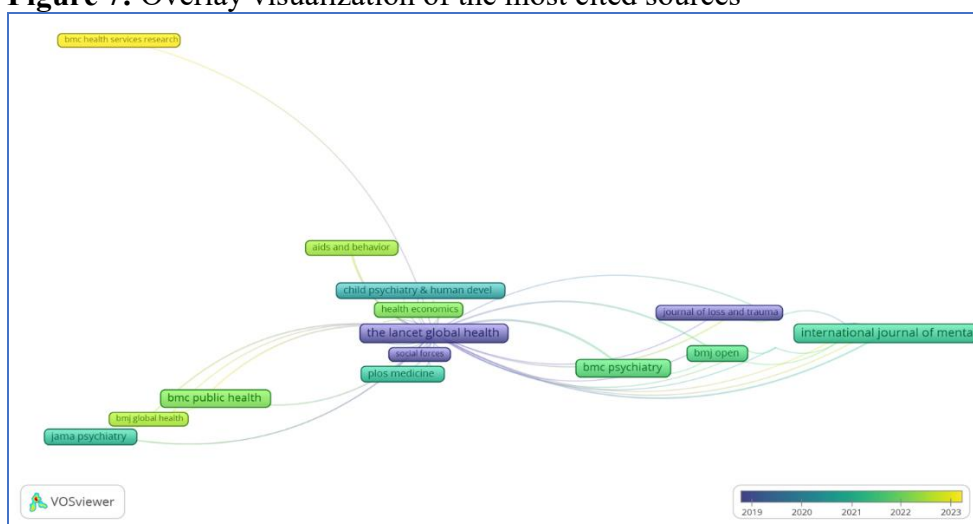
The overlay visualization presented in Figure 7 highlights the interdisciplinary nature of psychological distress research by mapping the relationships among journals. It is revealed that the Lancet Global Health, BMC Public Health, and BMC Psychiatry were cited to be influential journals with broad thematic linkages to global health and mental health research in relation to psychological distress. The connections between nodes reflect co-citation or bibliometric coupling, suggesting shared references and overlapping subject areas. Temporal trends, illustrated through colour gradients ranging from 2019 to 2024, reveal the evolving prominence of research in the field. Journals such as the *International Journal of Mental Health* and *JAMA Psychiatry* have shown more recent contributions, indicating their growing influence. This visualization highlights the dynamic and collaborative growth of literature at the intersection of public health, psychiatry, and global health, while also identifying key contributors and thematic clusters that are shaping current research on psychological distress.

Furthermore, the study analysed the bibliographic coupling between organizations. The analysis was based on the default cut off point of 5 minimum organization documents. Bibliographic coupling is when two or more organizations are cited by the same third-party sources in their publications. Essentially, the greater the number of shared citations between two organizations, the stronger their bibliographic coupling. This method was used to identify relationships and similarities among organizations based on their research outputs and the extent to which they cite common sources, thereby revealing patterns of intellectual alignment and collaborative potential. The findings of this analysis are presented in Figure 8.

Figure 8: Network visualisation of bibliographic coupling of organisation about psychological distress
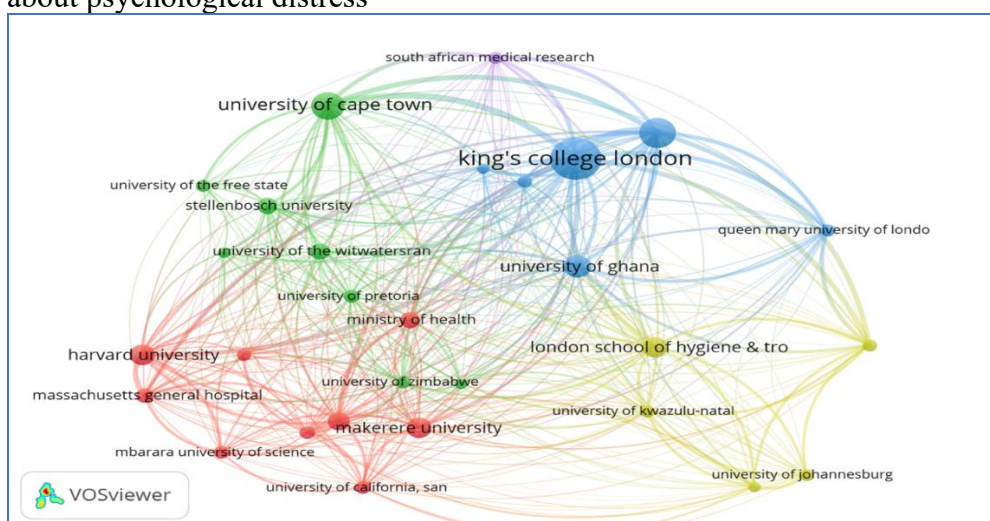
Findings in Figure 8 indicate connections between the nodes that demonstrate bibliographic coupling among the organisations. The thickness of the lines typically represents the strength of the coupling; a thicker line signifies a greater number of shared references between the two connected organisations. The varying colours signify clusters of closely related organisations based on common references. Organisations within the same cluster are likely engaged in similar topics or related research fields. For instance, the Blue Cluster comprises organisations like King's College London and the University of Ghana, indicating a strong bibliographic coupling between them, suggesting they may have significant shared research interests. The Green Cluster includes organisations such as the University of Cape Town and the University of the Free State, indicating that these organisations are more closely related to each other than those in other clusters. The Red Cluster encompasses organisations like Harvard University and Makerere University which share a considerable number of references

with each other, suggesting close research connections or similar focus areas. This analysis also reveals inter-cluster connections, as illustrated in the figure 8 by the links bridging different clusters, indicating cross-thematic collaboration and intellectual overlap among research groups. For example, connections between the blue and red clusters indicate that while these organizations are part of different research networks, they still share some standard references, suggesting cross-disciplinary or collaborative research.

Analysis of the keywords co-occurrence
The analysis of the authors' keywords of scientific papers in Africa about psychological distress among higher learning students considered those occurred at least 25 times. he findings revealed that out of 7,399 terms extracted, 95 keywords met the inclusion threshold based on the default 60% selection criteria. Of these 95 keywords, only 57 were selected for analysis by the VOSviewer software, reflecting their relevance and frequency within the literature. These keywords were analysed from the titles and abstracts of the papers; structured abstract labels and copyright statements were ignored. Results of the most frequent keywords were summarised in Table 4

Table 4
The top 20 keywords from literature about psychological distress

No	Keyword	Occurrences
1	Person	190
2	Depression	162
3	Mental illness	122
4	Patient	114
5	Woman	113
6	Review	108
7	Adolescent	98
8	Covid	95
9	Student	85
10	Practice	83
11	Training	83
12	Knowledge	82
13	Anxiety	76
14	Stigma	76
15	Attitude	74
16	Barrier	74
17	Food insecurity	74
18	Mental health service	74
19	Treatment	74
20	Effect	70

Source: Researchers' conceptualization (2024)

Table 4 shows the top twenty keywords selected from a more extensive set, ranked by the number of occurrences in research or bibliometric analysis. The table also gives an insight into a study's themes and focal areas related to psychological distress, mental health, or healthcare topics. It also reveals a strong emphasis on mental health and associated conditions, highlighting commonly discussed issues such as depression, anxiety, mental illness, and stigma. It also draws attention to the role of social and psychological factors in shaping experiences of mental health, with stigma frequently appearing as both a symptom and a barrier. The COVID-19 pandemic emerged as a distinct thematic cluster, underscoring its significant impact on mental health—marked by heightened psychological distress and widespread disruptions in treatment and support services.

A diverse range of populations is identified as being significantly affected by mental health issues, including women, adolescents, students, and patients, suggesting a focus on demographic-specific experiences. The discourse also emphasizes the role of healthcare systems, as terms like treatment, practice, mental health services, and training suggest active efforts to address mental health through service provision and professional development. Furthermore, the presence of social determinants such as food insecurity and barriers underscores the intersection between structural inequalities and mental health outcomes. Further insights can be drawn from the co-occurrence map of keywords, presented in Figure 9, which offers a network visualization of the key terms as they appeared across the reviewed articles.

Figure 9: Co-occurrence map of keywords

From the co-occurrence map of keywords, the visualisation provides a snapshot of the research landscape on psychological distress; it highlights key areas of focus such as depression, vulnerable populations such as (women and adolescents), mental illness, stigma and the impact of the COVID-19 pandemic. It also reveals the interdisciplinary nature of the research, with connections between psychological, social and environmental factors contributing to distress.

The most frequent terms related to psychological distress were categorised into six (6) coloured clusters: Cluster 1 (red) consisted of 22 items that involved keywords related to "adolescents, adults, age, depression, pregnancy, food insecurity, pregnant women, anxiety, mental disorder" and others as can be seen in figure 9. Cluster 2 (green) was represented by 16 items which involved keywords such as "barrier, bipolar disorder, training, schizophrenia patient, persons" etc. (see figure 9). Cluster 3 (blue) involved keywords such as "polices, gap, youth, literature, middle-income country, recovery, and mental illness." Cluster 4 (yellow) involved keywords like "attitudes, climate change, knowledge and students" while cluster 5 (purple) involved keywords like "life, quality, self, and Uganda." The sixth cluster had 2 items (ocean blue) that are related to disease, keywords involved were "COVID 19 and pandemic." It was also noted that very few studies focused on psychological distress among university students in higher learning institutions in Africa.

In addition, the VOSviewer network visualisation revealed a bibliographic coupling among institutions involved in research on psychological distress. African institutions were found to be less coupling with fellow African institutions than the way it does to the global collaborations in the field. The University of Cape Town, Makerere University, University of Johannesburg, University of Ghana, and Addis Ababa University were revealed to have a significant collaboration with institutions from North America, such as Harvard University, Massachusetts General Hospital, King's College London, and London School of Hygiene & Tropical Medicine. More information can be seen in Figure 11.

Figure 11: Bibliographic Coupling of Institutions About Psychological Distress Research
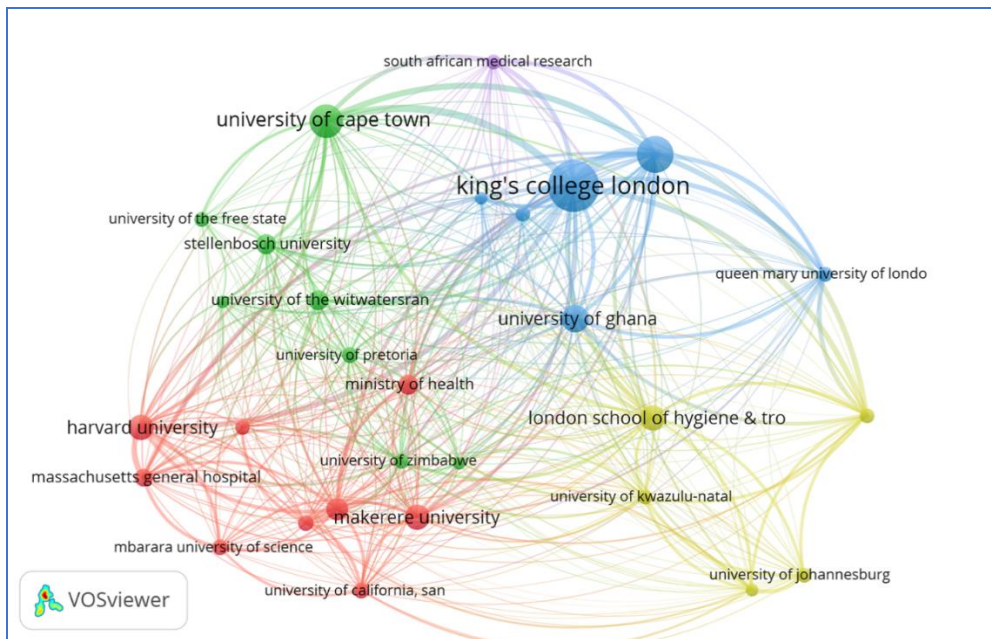
Analysis revealed that collaborations among institutions focused on medical or clinical perspectives, psychological distress within the African context, mental health in the UK and Africa, the public health approach, tropical diseases, and health issues in Africa. The network visualization reveals substantial international collaboration, with particularly strong connections between African institutions and those in the United States and the United Kingdom. This global engagement underscores the importance of adopting a geographically diverse and multidisciplinary approach to the study of psychological distress. However, thematic analysis indicates that only a small portion of the reviewed studies specifically focused on psychological distress among students in higher education institutions. The majority of research instead concentrated on the general population and broader social and health-related issues.

Discussion

This bibliometric study examines the fluctuating patterns of scientific research publications on psychological distress among higher education students in Africa over the past eight years, from 2018 to 2024. The analysis includes citation metrics for the most cited authors, organizations, and countries, as well as an assessment of publication output by country. Additionally, the study investigates co-authorship networks, keyword co-

occurrence, and bibliographic coupling among organizations to map the collaborative and thematic structure of the research landscape.

This bibliometric analysis identified fluctuating publication trends regarding psychological distress among higher education students in Africa. Specifically, a decline in publications was observed between 2018 and 2020, followed by a sharp increase in research output in subsequent years. The primary focus of these studies was the relationship between psychological distress and associated risk factors, particularly in the context of the COVID-19 pandemic. The dynamic nature of publication trends can be largely attributed to the global impact of the pandemic, which prompted researchers worldwide, including those in Africa, to investigate the psychological effects of COVID-19. Similar trends have been reported in previous bibliometric studies such as those conducted by Chen *et al*. (2021) and Egwuogu *et al*. (2021). Moreover, increased financial support from international donors during the pandemic facilitated empirical studies on mental health in Africa. The present study found a significant rise in publications between 2021 and 2023, followed by a notable decline in 2024. These findings align with the bibliometric study by Egwuogu *et al*. (2021) on the scientific literature concerning mental health research in Africa, which reported a substantial increase in publications in 2021. Similarly, Xu *et al*. (2024) conducted a bibliometric analysis on global psychological distress trends, revealing a surge in research output during the COVID-19 pandemic, particularly concerning psychological distress in stroke patients. In addition, a comparative bibliometric analysis by Maalouf *et al*. (2020) on mental health research in response to the COVID-19, Ebola, and H1N1 outbreaks revealed that the volume of mental health studies was significantly higher for COVID-19 than for Ebola and H1N1 combined.

This study identified the University of Cape Town in South Africa as the leading institution in publishing research on psychological distress among higher education students in Africa. It was followed by Addis Ababa University in Ethiopia, the University of Ghana, and Makerere University in Uganda. These findings suggest that South African institutions have played a particularly prominent role in advancing research on this topic. A similar trend was observed in the bibliometric review conducted by Fadiji *et al*. (2024) on positive psychology and well-being in Africa, which found that the top ten contributing institutions were all based in South Africa. Furthermore, the majority of these publications were co-authored with researchers from developed countries, including the United States, the United Kingdom, Canada, Germany, Norway, the Netherlands, and China. This collaboration suggests that African scholars are actively contributing to the global discourse on psychological distress, which has emerged as a significant

international concern (Chen *et al*., 2021). However, it also implies a potential gap in localized attention and awareness regarding the prevalence and impact of psychological distress within African communities. This underscores the need for increased scholarly focus and policy-driven engagement to address context-specific mental health challenges across the continent.

The keyword analysis in this study indicates that a significant portion of the reviewed literature on psychological distress has associated the phenomenon with individual-level characteristics, depression, and anxiety. The analysis revealed that, although 'anxiety' was not the most frequently occurring keyword, it remained highly relevant within the context of higher education students, reflecting its significance as a core aspect of psychological distress in academic settings. These findings align with those of Egwuogu *et al*. (2021). Additionally, the keyword analysis highlighted a strong focus on gender and demographic factors, with terms such as "woman" and "adolescent" suggesting that gender and age play crucial roles in the study of psychological distress. Research in Africa appears to concentrate more on the effects of psychological distress among women than men. For instance, Kondirolli and Sunder (2022) found that women are disproportionately affected by psychological distress compared to their male counterparts. This observation highlights the need for further research to explore why men appear to be less affected by psychological distress, including potential underreporting, gender-based coping mechanisms, or cultural perceptions of mental health.

Moreover, keywords such as "COVID-19" and "pandemic" were highly relevant, emphasizing the considerable impact of the COVID-19 pandemic on psychological distress among students. These findings are consistent with those reported by Chen *et al*. (2021). Similarly, a bibliometric study by Ndibalema (2024) investigating the rise of cyberbullying among higher education students noted an increase in research publications on students' mental health between 2020 and 2023. It was also revealed in the study by Maalouf *et al*. (2020). It was also demonstrated that most studies on psychological distress were interconnected with broader mental health concerns. In addition to depression, frequently occurring terms included "mental illness," "mental health services," "mental disorders," "stress," and "schizophrenia." This indicates that, in alignment with global research trends, scholars in Africa have also placed significant emphasis on the psychological well-being of students—a pattern similarly observed in the studies by Egwuogu *et al*. (2021) and Chen *et al*. (2021). Additionally, keywords such as "barriers" and "stigma" highlight critical challenges faced by students experiencing psychological distress.

The analysis further highlights a research gap in the explicit examination of the relationship between academia and psychological distress. While the presence of keywords such as "review," "practice," "training," "systematic review," and "qualitative study" suggests a research-oriented approach, the limited focus on academia indicates a need for more targeted investigations. This gap raises critical questions about whether current studies sufficiently address the impact of psychological distress on academic engagement, performance, and institutional support systems. Furthermore, existing literature overwhelmingly supports the notion that psychological distress negatively impacts students' academic performance and overall mental well-being (Kondirolli & Sunder, 2022). However, the extent to which educational institutions have adapted their policies and interventions to mitigate these effects remains unclear, highlighting a critical need for further research to bridge this knowledge gap.

The findings of this study identified the top ten African countries contributing most significantly to research on psychological distress among higher education students: South Africa, Ethiopia, Ghana, Kenya, Uganda, Nigeria, Zimbabwe, Zambia, Rwanda, and Egypt. Among them, South Africa emerged as the leading contributor, reflecting its relatively advanced research infrastructure and greater access to funding (Pilla & Edward, 2019). This trend underscores broader disparities in research capacity across the African continent. Notably, institutions such as the University of Cape Town and the University of Pretoria have assumed dominant roles in this research area, likely due to socioeconomic advantages, stronger funding mechanisms, and national research priorities that support high academic output. This observed trend aligns with the findings of Fadiji *et al*. (2024), who similarly reported that South Africa is the central hub of scientific productivity in Africa. Their bibliometric analysis emphasized the dominance of South African institutions, particularly North-West University, thereby reinforcing the notion that research output remains concentrated within a few well-resourced academic centers. This disparity raises critical questions about how other African nations might expand their research contributions and whether structural barriers—such as limited funding, inadequate institutional support, and lack of policy engagement—are restricting broader participation in psychological distress research across the continent."

Furthermore, the findings from the current review revealed limited co-authorship among African countries and indicated many co-authorships with countries from developed countries. South Africa is the leading country in Africa to cooperate with countries like the United States, the United Kingdom, China and Canada. Other countries, such as Ethiopia and Ghana, were found to collaborate closely with international partners in research and

publication. This suggests that psychological distress remains an underexplored issue within much of Africa and may require more context-specific evidence to accurately reflect its prevalence and impact (Mboya *et al*., 2020a). While such collaborations can facilitate the generation and dissemination of new knowledge, there is also a risk that, if not approached carefully, the resulting interventions or solutions may not be fully aligned with the realities of the African context. The lack of strong collaborations among African authors on psychological distress among higher learning students may limit researchers from combining their expertise, potential and experiences to generate innovative ideas towards solving psychological distress problems. Students may also need more access to knowledge about psychological distress.

To address the limited collaboration among African authors on psychological distress in higher education, policymakers should promote regional research networks and cross-country academic partnerships. These efforts can foster interdisciplinary collaboration, allowing researchers to integrate diverse areas of expertise and develop innovative solutions to the mental health challenges faced by students. In parallel, higher education policies should mandate the incorporation of comprehensive mental health support systems and awareness programs within universities, ensuring a sustained and coordinated response to psychological distress. At a practical level, universities should prioritize expanding access to mental health education and support services through peer-led initiatives, dedicated counseling centers, and digital platforms. Additionally, building the capacity of academic and health staff is essential to equip them with the skills necessary to identify and respond to psychological distress at an early stage. Collectively, these actions can contribute to a more supportive academic environment and enhance the overall well-being of students.

Conclusion

This bibliometric analysis highlights the evolving research landscape on psychological distress among higher education students in Africa, revealing both progress and persistent challenges. The study identifies fluctuating publication trends, with a decline in research output between 2018 and 2020, followed by a notable surge from 2021 to 2023 largely driven by the onset of the COVID-19 pandemic. The pandemic heightened interest in psychological distress and attracted financial support from international donors, which facilitated a wave of empirical studies on mental health across Africa. However, the observed decline in publications in 2024 may signal a waning prioritization of the issue, raising concerns about the long-term sustainability of scholarly engagement. Additionally, the study highlights that much of the existing research focuses on individual-level factors such as depression and

anxiety, while broader structural and institutional determinants of psychological distress remain insufficiently explored.

The dominance of South African institutions, particularly the University of Cape Town and the University of Pretoria, underscores disparities in research capacity across African countries. While South Africa has established itself as a leading contributor, the limited representation of other nations suggests significant gaps in research infrastructure, funding, and policy engagement across the continent. Moreover, the study reveals that the majority of African publications on psychological distress involve international co-authorships, predominantly with scholars from developed nations, particularly the United States, the United Kingdom, Canada, and China. While such collaborations enhance knowledge exchange and resource access, they also raise concerns about how research outcomes accurately reflect the African context.

A key gap identified in this study is the limited exploration of the direct relationship between academia and psychological distress. While keywords such as "review," "training," and "qualitative study" reflect a strong research orientation, there is a lack of targeted investigations into how psychological distress affects academic engagement, performance, and institutional support systems. Moreover, most research remains concentrated on individual-level factors, with structural and institutional influences largely underexplored. The absence of robust intra-African research collaborations further limits the potential for context-specific interventions tailored to the mental health needs of African students. To address these gaps, it is crucial to sustain mental health research beyond the COVID-19 pandemic.

Although the crisis spurred increased scholarly attention, the decline in publications in 2024 raises concerns about diminishing focus. Therefore, universities, policymakers, and funding agencies must commit to long-term investment in mental health research, interventions, and systems to monitor student well-being over time. Establishing regional research hubs, securing sustainable funding mechanisms, and enhancing intra-African collaboration will be critical steps in building research capacity and producing culturally relevant, evidence-based solutions. However,this study's findings are tempered by several key limitations: by analysing only open-access, English-language articles, it overlooked potentially rich insights in subscription journals and non-English publications, introducing both accessibility and language biases; furthermore, its exclusive focus on empirical research from Africa, while offering valuable regional depth, restricts the broader applicability of its conclusions to higher education contexts in other socio-economic, cultural, and environmental settings.

Additionally, this study recommends expanding the scope of research to include societal and cultural determinants of psychological distress, such as stigma, traditional beliefs, and economic barriers. These factors are essential for developing holistic and contextually grounded mental health strategies. Promoting cross-border collaboration among African institutions through conferences, shared platforms, and targeted funding can help bridge the current disconnect and foster innovation across the continent. Furthermore, a shift in research emphasis is needed toward early detection and preventative strategies, as most existing studies focus on severe psychological conditions. Identifying early warning signs and implementing proactive mental health initiatives can enable timely intervention and support. By advancing these recommendations, researchers, policymakers, and academic institutions can strengthen the existing knowledge base, foster more inclusive and collaborative research ecosystems, and improve the mental well-being of higher education students across Africa.

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