

Teenage pregnancy and mental health in Africa: A bibliometric analysis

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ABSTRACT

Introduction

Adolescent pregnancy is a significant public health and societal challenge in Africa, with far-reaching implications for young people's mental well-being.

Purpose

This study aimed to analyse research trends, geographic patterns, and thematic focuses on teenage pregnancy and mental health in Africa using bibliometric methods.

Methods

A bibliometric analysis was conducted using PubMed/MEDLINE, Scopus, and SABINET databases, covering the period 2014–2023. Relevant peer-reviewed journal articles focusing on adolescent pregnancy and mental health were analysed with VOSviewer to assess publication trends, co-authorship, keyword co-occurrence, and citation impact.

Results

A total of 257 articles met the inclusion criteria, showing a sharp rise in research activity after 2015. Most studies originated from South Africa (27.1%), Nigeria (18.3%), and Kenya (13.1%), while Central and North Africa had low output. The main topics studied were depression (72%), anxiety (58%), post-traumatic stress disorder (41%), and suicidal ideation (29%). Commonly cited socio-economic risk factors included poverty, intimate partner violence, and inadequate reproductive health education. Citation analysis indicated generally moderate research impact and limited inter-country collaboration, with only 15.8% of studies involving non-African authors. Despite the growth in publications, only 14% evaluated interventions, and few addressed school-based or digital mental health approaches.

Conclusion

While research on teenage pregnancy and mental health in Africa has increased, regional and thematic gaps persist. Future work should emphasise intervention studies, longitudinal designs, and broader geographic coverage.

INTRODUCTION

Adolescent pregnancy represents a critical public health concern in Africa, where the continent records some of the highest teenage birth rates globally. Nearly half of the 18.8 million global adolescent births occur in Sub-Saharan

Africa (World Health Organization [WHO], 2022). While various studies have explored the causes and impacts of adolescent pregnancy, there remains limited understanding of how this issue intersects with mental health and scholarly research trends in Africa.

The impact of social determinants plays a crucial role in shaping reproductive outcomes in adolescence. Teen pregnancy disproportionately affects low-income individuals, girls living in rural settings, and those from marginalized groups (Kassa et al., 2018). Adolescent girls further face stigma, school dropout, and reduced economic prospects for themselves and their children, perpetuating cycles of gender disparity and poverty (Ganchimeg et al., 2019). Notwithstanding numerous interventions by policymakers, their effectiveness in reducing teen pregnancy in Africa has varied due to weaknesses in health systems, cultural barriers, and poor implementation of policies (Mchunu et al., 2012).

Mental Health Consequences of Teenage Pregnancy

Adolescent mothers are at increased risk of psychiatric conditions, including depression, anxiety disorders, post-traumatic stress disorder (PTSD), and suicidal ideation (Grobler et al., 2021; Ninsiima et al., 2020). Mental health effects of teenage pregnancy are often linked to sociological factors, such as societal discrimination, lack of emotional support, intimate partner violence, and economic challenges (Rezaei et al., 2019). Among these, depression has the highest prevalence, ranging from 20% to 60% among teen mothers in Africa (Stevens et al., 2019).

In South Africa, Christofides et al. (2014) found that teenage mothers are twice as likely to suffer from depression compared to their peers, highlighting the strong correlation between adolescent pregnancy and poor mental health outcomes. Similarly, research in Nigeria and Kenya has shown that low self-esteem, lack of supportive partners, and economic difficulties significantly contribute to distress and anxiety among teen mothers (Atuyambe et al., 2015; Mwanza & Odimegwu, 2017). Despite these findings, there remains a glaring lack of integrated mental health programs tailored to the specific needs of teenage mothers across much of Africa (Mutua et al., 2021).

Impact of Teenage Pregnancy on Educational and Psychosocial Well-being

Education plays a central role in shaping the welfare of young people and their socio-economic futures. In Africa, adolescent pregnancy is a leading cause of school dropout among girls, with only about 30% of teen mothers returning to education after giving birth (Lloyd, 2020). Programs for reintegration of teen mothers have been implemented in

countries such as Malawi and Tanzania, but discrimination, childcare responsibilities, and economic challenges often hinder their return to school (Mengo & Black, 2020).

From a psychosocial perspective, teen mothers frequently experience social isolation, discrimination, and poor peer acceptance, which exacerbate emotional difficulties and compromise mental well-being (Hall et al., 2019). Societal perceptions and traditional gender roles often label teen mothers as irresponsible or morally deficient, fostering feelings of shame, low self-worth, and vulnerability to abusive relationships (Ngabaza & Shefer, 2019). These psychosocial stressors underscore the importance of interventions that address both the educational and emotional well-being of adolescent mothers.

Gaps in Research and Need for Bibliometric Analysis

Despite the growing body of research on teenage pregnancy and mental health in Africa, much of the literature remains fragmented and country-specific, limiting inter-country comparisons (Yakubu & Salisu, 2018). Additionally, few studies employ longitudinal designs necessary to track changes in mental health outcomes over time (Molitor et al., 2021). Pilot interventions have been implemented in some African countries, yet their scalability and broader impact remain underexplored (Donovan et al., 2020).

Bibliometric analysis provides a robust empirical tool to map research trends, identify scholarly contributions, uncover thematic foci, and reveal regional imbalances (Donthu et al., 2021). Conducting a bibliometric review of research on teenage pregnancy and mental health in Africa can help fill knowledge gaps, guide future research directions, and inform policy recommendations to improve adolescent mothers' mental well-being.

METHODS

Study Design

This study employed bibliometric analysis to review literature on teenage pregnancy and mental health in Africa. Bibliometric analysis is a quantitative method used to examine the structure, development, and relevance of scholarly publications within a research field. It enables systematic review of literature to identify publication patterns, focus areas, and underexplored topics.

Data Sources and Search Strategy

A comprehensive literature search was conducted using PubMed/MEDLINE (biomedicine and public health), Scopus (interdisciplinary research), and SABINET (Africa-focused research). The search strategy integrated keywords and Medical Subject Headings (MeSH) related to "adolescent pregnancy," "psychiatric disorders," and "Africa." Boolean operators (AND, OR) were used to refine the search. Keywords included terms for teenage pregnancy (e.g., "adolescent pregnancy," "early pregnancy") and mental health outcomes (e.g., "depression," "anxiety," "stress," "psychosocial"). The search included the term "Africa" and specific countries (e.g., South Africa, Nigeria, Kenya).

Inclusion criteria were peer-reviewed journal articles published in English between 2014 and 2023 using quantitative, qualitative, or mixed methods and reporting statistical results or interventions related to teenage pregnancy and mental health. Exclusion criteria included studies outside Africa, research not explicitly linking teenage pregnancy to mental health outcomes, editorials, dissertations, conference abstracts, and duplicated research.

Data Extraction and Analysis

Selected papers were imported into EndNote to remove duplicates. VOSviewer was used for bibliometric visualisation and statistical analysis. Bibliometric measures included publication patterns, author characteristics and collaboration networks, leading authors, country-level distribution, journal impact factor, and citation counts. Keyword co-occurrence analysis identified research topics, subthemes, and trending areas. Descriptive and network analyses were performed to examine yearly publication trends, cited authors, and global collaborations.

Quality Assessment

Quality assurance involved method-based and journal-based evaluation. PRISMA guidelines for systematic reviews of randomized trials were applied to ensure transparency and methodological rigor. SCImago Journal Rank (SJR) and Journal Impact Factor (JIF) were used to evaluate the influence and credibility of publications.

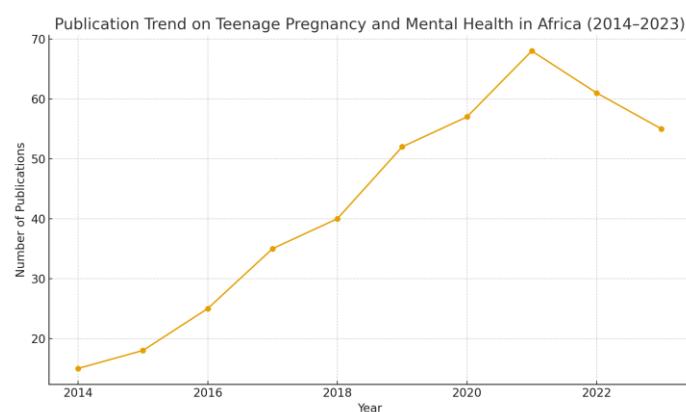
Ethical Considerations

As secondary research using previously published data, ethical approval was not required. All sources were appropriately cited in accordance with academic standards.

RESULTS

A total of 320 peer-reviewed papers were identified, of which 257 met the inclusion criteria after removal of duplicates and eligibility checks. Publication output was consistent year-to-year from 2014 to 2023, with greater volume from 2015 onwards. The peak publication year was 2021, with 68 papers published, reflecting a global increase in focus on adolescent well-being (Figure 1). Overall, the upward trend suggests that teenage pregnancy is increasingly studied in the context of its effects on mental health in Africa.

Figure 1:
Publication trend over time



Geographical Distribution of Studies

Studies were geographically concentrated, with South Africa (n = 70, 27.1%), Nigeria (n = 47, 18.3%), and Kenya (n = 34, 13.1%) contributing the most. Other notable contributors included Ethiopia (n = 26, 10.1%), Ghana (n = 20, 7.6%), and Uganda (n = 16, 6.4%) (Table 1). Research output from Central and North African countries was limited, indicating a need for broader geographic coverage.

Table 1:
Summary of Key Findings

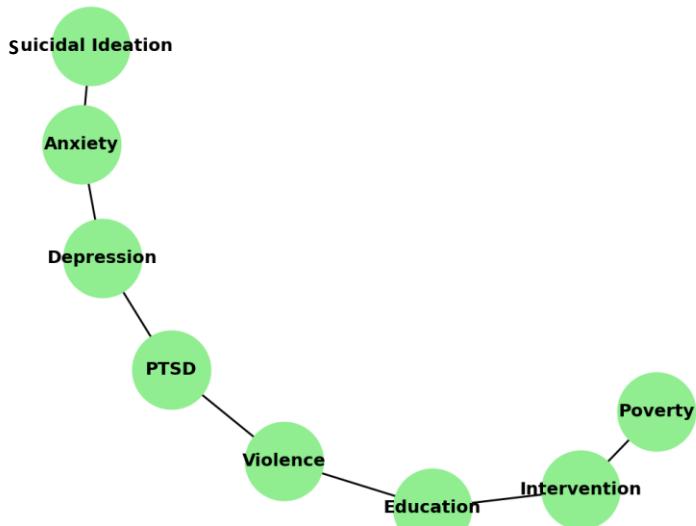
Category	Findings
Total studies analysed	257
Peak publication year	2021 (n = 68)
Top contributing countries	South Africa (27.1%), Nigeria (18.3%), Kenya (13.1%)
Most studied mental health issues	Depression (72%), Anxiety (58%), PTSD (41%), Suicidal ideation (29%)

Category	Findings
Main risk factors	Poverty, abuse, social isolation, lack of reproductive health education
Common interventions	Community support (24%), School-based programs (17%), Digital mental health (5%)
Average citations per paper	19.6
Gaps in research	Limited intervention studies, lack of regional diversity, minimal longitudinal research

Keyword Occurrence Analysis

Three main themes emerged from keyword analysis. First, teenage pregnancy's mental health implications were most frequently examined, with depression reported in 72% of studies, anxiety in 58%, PTSD in 41%, and suicidal ideation in 29%. Second, socio-economic and structural determinants, including poverty, lack of parental support, social isolation, exposure to sexual assault, intimate partner violence, and inadequate reproductive health education, were frequently cited as contributing factors (Kassa et al., 2018; Ninsiima et al., 2020). Third, interventions to support mental well-being were highlighted, with community programmes reported in 24% of studies, school-based interventions in 17%, and digital mental health initiatives in 5%. Peer and family support were documented in 31% of studies as mitigating emotional distress (Figure 2).

Figure 3:
Keyword Co-occurrence Clusters highlighting major thematic groupings

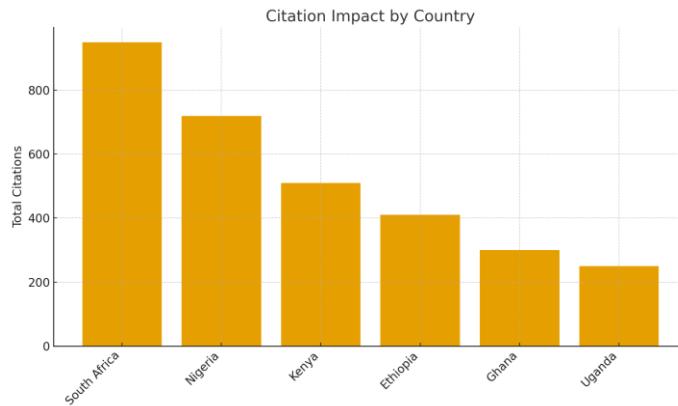


Citation and Impact Analysis

Citation counts indicated moderate scholarly contribution, with the most cited article receiving 421 citations. On

average, each paper received 19.6 citations, demonstrating active engagement in the research field. Prominent authors had an h-index of 24, indicating consistent scholarly output. Leading journals included *BMC Women's Health*, *AIDS and Behaviour*, and *PLOS One*, reflecting influential publication venues. Citation patterns confirm the relevance and visibility of research on teenage pregnancy and mental health in Africa (Donthu et al., 2021).

Figure 4:
Citation Impact by Country reflecting research influence and visibility



Gaps and Limitations in Existing Research

Key limitations identified include underrepresentation of Francophone and Lusophone countries, limited intervention-based research (only 14% of studies), and minimal longitudinal designs. Although mobile health (mHealth) interventions are increasingly deployed globally, digital approaches remain underutilized, appearing in only 5% of studies.

DISCUSSION

This bibliometric review highlights the evolving landscape of research on teenage pregnancy and mental health in Africa, revealing growth in scholarly attention post-2015. The findings align with bibliometric studies from Asia and Latin America, which also report increased attention to adolescent reproductive health yet similar gaps in intervention-oriented research (Khayat et al., 2024).

Rising Research Interest in Teenage Pregnancy and Mental Health

The study revealed that from 2015 onwards, there was a growing tendency of research work on teenage pregnancy in relation to mental illness in Africa. There was consistency in global and regional movements for advocating for

adolescent reproductive welfare as well as their emotional welfare (Patton et al., 2016). There was significantly higher research work from 2015 onwards that might have been in view of the United Nations' adoption of SDGs Goal 3 (*Good Health and Well-being*) and Goal 5 (*Gender Equality*), which focus on teenage welfare as well as that of mothers (United Nations, 2015).

Geographical Disparities in Research Output

South Africa, Nigeria, and Kenya have been found to contribute significantly to research in this area. They have relatively more developed research infrastructure, established public health organizations, and government-sponsored teen health programs (Morris & Rushwan, 2015). There has been limited research output from Central Africa and North Africa, though, which suggests variability in scholarly contribution as well as in funding allocation (Akinrinlola, Lawal, & Adepoju, 2022). Francophone and Lusophone countries of Africa have not prominently appeared in research in this area due to potential challenges in language, lack of listing in journals, as well as resource limitations (Adebayo, Omole, & Bamgboye, 2020).

Key Mental Health Challenges Faced by Adolescent Mothers

The thematic analysis has shown that teenage pregnancy has received more focus than teenage mothers' mental implications of teenage pregnancy in relation to depression, anxiety, PTSD, and suicidal ideation. Teenage pregnancy has emerged as a leading determinant of undesirable implications on mental health through economic distress, stigma, and absence of proper social assistance (Ninsiima, Chiumia, & Ndeijo, 2020).

Teenage mothers face more stress caused by interrupted education, economic instability, and rejections from family members (Lanzi, Bert, & Jacobs, 2009). Research in high-income settings has further confirmed that teenage mothers have higher risks of postnatal depression than older mothers, indicating that teenage pregnancy is not only regional but globally prevalent (Molitor, Walsh, & Lanthier, 2021). Poverty, gender disparity, and poor provision of psychiatric services in Africa further increase these risks despite their prevalence in other settings (Chandra-Mouli, Camacho, & Michaud, 2013).

Socioeconomic and Structural Determinants of Mental Health in Teenage Mothers

The bibliometric review highlights some socio-economic and structural vulnerabilities of teen pregnancy and psychiatric illness. Poverty, lack of family support, intimate partner violence, and limited access to reproductive health services have been cited as key determinants of teenage pregnancy (Bearinger, Sieving, Ferguson, & Sharma, 2007). Intimate partner violence significantly affects teen pregnancy outcomes as well as psychiatric illness (Yakubu & Salisu, 2018). Poor sexual reproductive education and limited access to family planning further increase the risk of unplanned pregnancy, compromising psychiatric well-being (Chandra-Mouli, Camacho, & Michaud, 2013).

Limited Research on Interventions and Mental Health Support

Despite the well-documented ill effects of teenage pregnancy on mental health, few studies have investigated intervention approaches. Only 17% of papers considered school-based approaches, 24% considered community-based supportive approaches, and just 5% considered digital approaches to mental health. This reveals a substantial gap in Africa-specific research on intervention strategies for teen mothers (Masuku et al., 2021; Mabila et al., 2023).

Peer support, cognitive behavioural therapy (CBT), and psychosocial counselling have been shown in high-income countries to improve teen mothers' mental well-being (Romo et al., 2016), but the extent of their use in Africa is unclear. There is also limited follow-up research on the medium- to long-term effects of these interventions, highlighting the need for longitudinal studies (Muthelo et al., 2024).

Citation and Impact Analysis: Gaps in Knowledge Translation

Citation analysis revealed that while some papers have been highly cited, the overall regional and global impact is low. Only 15.8% of studies involved global partnerships, indicating that African research on teen pregnancy and mental illness remains regionally specific and poorly integrated internationally (Wright et al., 2018). Furthermore, most highly cited studies were descriptive rather than intervention-focused, suggesting a gap in translating research into practice and policy (Akinrinlola, Lawal, & Adepoju, 2022). Improved dissemination

strategies and policy linkage would amplify the impact of existing research.

Study Limitations

This study considered only English-language publications, excluding relevant work in French, Portuguese, or indigenous African languages, which may limit generalisability. Database limitations may have excluded regional African journals, reducing representation of regional outputs. Additionally, varying quality of included papers and insufficient detail on mental health treatments affect analysis and generalisability.

CONCLUSION AND RECOMMENDATIONS

This bibliometric review shows increasing research on teen pregnancy and mental illness in Africa but identifies persistent gaps. Future research should aim for greater geographical representation, particularly in Central and North Africa. There is a need to evaluate the effectiveness of school-based, community, and digital mental health programs for teen mothers. Expanding global research partnerships would increase funding opportunities and research capacity. Longitudinal studies should follow teen mothers to better understand evolving mental health needs. Finally, research should be translated into practice and policy to bridge the evidence-to-practice gap and advance teen welfare in Africa.

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