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ORIGINAL RESEARCH

# A Bibliometric Analysis of Global Research on the Psychological Burden of HIV Stigma Among Adults: Implications for Nursing Practice

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**Abstract**

**Background:** HIV-related stigma remains a persistent barrier to psychological well-being and care among people living with HIV. Although research on its psychological burden has grown, no bibliometric synthesis has mapped its development or implications for nursing practice.
**Purpose:** This study aimed to conduct a bibliometric analysis of global research on the psychological burden of HIV stigma among adults, with particular attention to thematic evolution and implications for nursing care.
**Methods:** A bibliometric and thematic analysis was conducted on 131 journal articles indexed in Scopus from 2014 to 2025. Bibliometric mapping was performed using VOSviewer to examine publication trends, authorship patterns, country distribution, keyword co-occurrence networks, and temporal thematic evolution.
**Results:** The analysis found no publications prior to 2014, with output peaking in 2022 and 2024, confirming the field's novelty. Keyword clustering revealed six thematic domains: psychological distress (depression, anxiety, shame), treatment adherence and healthcare engagement, trauma-related stigma, resilience and protective factors, methodological advances in stigma measurement, and structural-societal stigma. Temporal analysis indicated a shift from documenting emotional distress to examining mediating processes, resilience, and intersectionality, marking a transition from descriptive to explanatory and intervention-focused research.
**Conclusion:** Research on the psychological burden of HIV stigma has expanded, with depression and anxiety remaining central, but increasing attention to resilience, coping, and systemic factors. However, gaps persist in translating these insights into stigma-sensitive nursing interventions. This bibliometric synthesis provides evidence to inform nurse-led strategies such as therapeutic communication, psychoeducation, and psychosocial support to mitigate stigma's psychological impact on PLHIV.

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## 1. Introduction

HIV-related stigma remains a significant barrier to psychological well-being and public health outcomes among people living with HIV (PLHIV). As a multidimensional phenomenon, stigma can manifest as internalized shame, anticipated discrimination, or overt social exclusion, each contributing to increased psychological distress, reduced treatment adherence, and social isolation among HIV-positive adults (Fox et al., 2018; Kohli et al., 2023; Sweileh, 2023). Despite advances in biomedical treatment, most notably the widespread availability of antiretroviral therapy (ART), the psychosocial burden of stigma continues to pose a formidable challenge for individuals affected by the virus (Chi et al., 2024; Turan, Budhwani, et al., 2017).

Globally, institutions such as the World Health Organization (WHO) and UNAIDS have emphasized the need to address stigma as a core component of HIV prevention and care strategies. Psychological stigma has been closely linked to heightened levels of depression, anxiety, low self-esteem, substance use, and suicidality among HIV-positive individuals (Armoon et al., 2022; Fathiandastgerdi et al., 2016; Thi Thanh Huong et al., 2018). These effects are often

compounded by intersecting forms of stigma related to gender, race, sexual orientation, or socio-economic status, further exacerbating mental health vulnerabilities in this population (Fauk, Ward, et al., 2021; Turan, Hatcher, et al., 2017).

Since the early 2000s, the psychological consequences of stigma among HIV-positive adults have become a critical focus of global health and behavioral research. Stigma continues to be one of the most persistent barriers to care, closely associated with a wide spectrum of adverse mental health outcomes, including depression, anxiety, psychological distress, and diminished quality of life (Abbas et al., 2023; Armoon et al., 2022; Ncitakalo et al., 2021). Furthermore, internalized stigma, where individuals adopt negative societal beliefs, has been strongly linked to feelings of shame, hopelessness, and diminished self-worth (Dubov et al., 2018; Varas-Díaz et al., 2017). These psychological effects often impede treatment adherence and discourage individuals from seeking both social and professional support (de los Rios et al., 2020; Okoli et al., 2021; Wilandika, 2018).

Additionally, enacted stigma, including discrimination in healthcare settings, workplaces, and personal relationships, contributes to alienation and mistrust, further intensifying mental health challenges (Fauk, Hawke, et al., 2021; Ninnoni et al., 2023; Yendewa et al., 2023). Even in the absence of overt discrimination, perceived stigma or the expectation of negative treatment can trigger chronic stress and anticipatory anxiety (Catona et al., 2016; Kim & Demarco, 2022). These psychological dimensions of stigma not only impact individual well-being but also affect broader public health goals, as they may hinder disclosure, reduce testing uptake, and compromise retention in care.

Recent literature has also highlighted the importance of intersectionality in understanding how stigma influences mental health outcomes. People who belong to multiple marginalized groups, such as sexual minorities, racial or ethnic minorities, or people who use drugs, often face layered forms of stigma that amplify psychological harm (Mooney et al., 2017; Turan, Budhwani, et al., 2017). For instance, gay and bisexual men living with HIV may experience dual stigmatization related to both their HIV status and sexual orientation, placing them at elevated risk for mental health issues (Dévieux et al., 2022).

Over the past two decades, academic interest in the psychological impact of stigma on HIV-positive adults has grown considerably, spanning disciplines such as psychology, medicine, public health, and the social sciences (Rzeszutek et al., 2021). Despite growing awareness, mental health interventions specifically tailored for HIV-positive adults remain limited, especially in low- and middle-income countries. Cultural stigmas, structural inequalities, and a lack of access to trained mental health professionals continue to hinder effective intervention and stigma mitigation (Mhungu et al., 2023; Stangl et al., 2019). Even in higher-resource settings, stigma often deters individuals from seeking mental health services due to fears of judgment, breaches of confidentiality, or social rejection (Alhassan et al., 2022; Hibbert et al., 2018; Okoli et al., 2021).

To address these challenges, a variety of psychological and community-based interventions have been explored, including cognitive-behavioral therapy, peer-led support groups, stigma-reduction campaigns, and resilience training (Andersson et al., 2020; Bradley et al., 2018; Wilandika et al., 2025). While these strategies have shown potential to reduce distress and encourage health-seeking behaviors, the fragmented nature of the research, spread across disciplines and cultural contexts, makes it difficult to evaluate progress or pinpoint enduring research gaps.

From a nursing perspective, understanding the evolving research on HIV-related psychological stigma through bibliometric analysis can aid in designing evidence-based, patient-centered interventions that nurses can implement across diverse care settings. By mapping the intellectual structure and tracking thematic shifts over time, research can clarify how the field has evolved, where it remains underdeveloped, and how future interdisciplinary efforts can be better aligned to support PLHIV. While numerous studies have explored the psychological outcomes of stigma, few have translated these findings into actionable insights for nursing. This underscores the need to identify how the evolving psychological discourse can support nurse-led care frameworks, including trauma-informed care, mental health screening, and psychosocial support systems. It also highlights opportunities for nurses to act as advocates and educators in reducing stigma within healthcare systems.

Given the integral role nurses play in providing psychosocial support, therapeutic communication, patient education, and advocacy for PLHIV, understanding the evolution of

stigma-related research is vital to informing stigma-sensitive nursing practices and interventions (Dewi et al., 2021; Pelletier et al., 2022). Despite the proliferation of studies on HIV-related stigma, there remains no comprehensive bibliometric synthesis that maps how psychological themes, particularly those relevant to mental health outcomes, have evolved over time from a nursing perspective. Previous reviews often lack a focus on how these research trends intersect with nursing roles, competencies, and care delivery models. Thus, this study fills a critical gap by offering a global, data-driven thematic analysis to inform stigma-sensitive and nurse-led interventions in mental health care for PLHIV.

To address this need, the present study conducts a bibliometric analysis using VOSviewer to systematically examine the scientific literature on the psychological effects of stigma on HIV-positive adults, leveraging quantitative mapping methods, including keyword co-occurrence, author networks, and thematic clustering. This study offers a broad, data-driven overview of the research landscape. This study aimed to conduct a comprehensive bibliometric analysis of global research on the psychological effects of stigma among HIV-positive adults, with particular attention to its implications for nursing practice. Specifically, the objectives are: (1) To analyze the research status on the psychological impact of stigma on HIV-positive adults from the perspectives of publication trends, countries, and author networks; (2) To identify major research hotspots and the evolution of themes using cluster and co-word analysis; and (3) To propose future research directions and policy implications based on emerging gaps and developmental trajectories.

## 2. Methods

### *2.1. Research design*

This study employed a bibliometric analysis to quantitatively and visually examine the development, structure, and thematic evolution of research on the psychological impact of stigma among HIV-positive adults. Bibliometric approaches are well-established for synthesizing large volumes of scientific literature, enabling researchers to identify publication trends, map co-authorship networks, detect keyword co-occurrence patterns, and uncover emerging research fronts. To conduct the analysis, we used VOSviewer (version 1.6.19), a specialized software for constructing and visualizing bibliometric networks.

Through this tool, relationships among keywords, authors, and countries were mapped, providing a systematic overview of the intellectual landscape and thematic progression within the field over a 10-year period. This perspective allows nurse educators, policymakers, and frontline clinicians to recognize knowledge clusters that directly influence clinical nursing strategies.

### *2.2. Search strategy*

The data were retrieved from the Scopus database, which is recognized as one of the most comprehensive sources of peer-reviewed literature across disciplines, including psychology, medicine, nursing, and public health. Scopus was selected as the sole database because it provides the most comprehensive coverage of peer-reviewed journals across medicine, psychology, and nursing, and offers reliable bibliometric metadata, such as author affiliations, citation counts, and keyword indexing. Its breadth and consistency make it the preferred database for bibliometric studies, while minimizing duplication and indexing inconsistencies that often arise when combining multiple sources.

The literature search was conducted using the following search string: (stress OR depressive) AND stigma AND self-stigma AND HIV. The search was performed in the Title, Abstract, and Keywords fields to ensure the retrieval of highly relevant records. This string was applied to the Title, Abstract, and Keywords fields to ensure the retrieval of highly relevant records. The timeframe was restricted to publications from January 1, 2014, to March 31, 2025, to capture both foundational and contemporary developments during the last 12 years. All retrieved documents were exported in CSV format compatible with VOSviewer.

### *2.3. Inclusion and exclusion criteria*

To ensure methodological rigor and thematic consistency, a systematic screening process was conducted based on PRISMA guidelines (Page et al., 2021). The inclusion criteria were: (1) articles published between 2014 and 2025; (2) English-language publications; (3) peer-reviewed journal articles (original research, reviews, or systematic reviews); and (4) studies focusing on the

psychological impact of stigma, self-stigma, or stress/depression-related symptoms among HIV-positive adults. Meanwhile, exclusion criteria were as follows: (1) studies focusing solely on children or adolescents without reference to adult populations; (2) non-peer-reviewed materials (e.g., conference papers, editorials, letters, book chapters); (3) articles discussing stigma or mental health unrelated to HIV; and (4) duplicates or entries with incomplete bibliographic data necessary for analysis. The screening process was conducted independently by multiple researchers. Any discrepancies in inclusion decisions were resolved through discussion and consensus to reduce potential selection bias.

2.4. *Screening and data selection*

The initial search retrieved 1,981 records from the Scopus database. After deduplication, the number of records remained unchanged (n = 1,981). All records were then subjected to title and abstract screening, during which 1,233 records were excluded based on relevance and publication type. Reasons for exclusion at this stage included: articles focusing solely on children or adolescents; non-peer-reviewed materials (such as conference papers, editorials, letters, and book chapters); and non-English-language publications.

A total of 748 records proceeded to the full-text eligibility review. At this stage, an additional 617 articles were excluded for addressing topics unrelated to the psychological impact of stigma among HIV-positive adults. This left 131 articles that fully met the inclusion criteria and were included in the final bibliometric analysis. All screening procedures were conducted independently by multiple researchers to ensure consistency and reduce bias. Discrepancies were resolved through discussion until full consensus was reached. The overall selection process is illustrated in Figure 1, which presents the PRISMA flowchart detailing the identification, screening, and inclusion of studies.

## 3. Results

3.1 *Publication trend*

The volume of published articles serves as a strong indicator of scholarly focus within a research domain. Notably, the analysis did not identify a single publication on the psychological burden of HIV stigma before 2014, underscoring the field's relative novelty. As shown in Figure 2, the publication trend from 2014 to 2025 reflects a domain that is both emerging and gaining traction. In 2014, academic output was minimal, with only two articles, rising slightly to five in 2015. A significant breakthrough occurred in 2016 with a sharp increase to 28 publications, demonstrating a surge in interest. However, this momentum briefly waned in 2017, with output falling back to five.

From 2018 onward, the field began to stabilize. Moderate growth returned with 12 articles in 2018 and 10 in 2019. A slight dip in 2020 to six publications may reflect broader disruptions from the COVID-19 pandemic. However, the period from 2021 to 2024 marked a more consistent rise, with 16 publications in 2021 and a peak of 22 in both 2022 and 2024. A small decline to 17 in 2023 did little to disrupt this overall upward trend. The dip to seven publications in 2025 should be viewed cautiously, as it likely reflects only the first few months of the year.

As more research is indexed, this number is expected to grow. Despite year-to-year variation, the broader trajectory signals increasing and sustained academic attention to the psychological impact of HIV-related stigma. These shifts highlight a growing recognition of its importance across psychology, public health, and the social sciences, as scholars continue to explore its impact and inform effective interventions.

*3.2 Analysis of the authors*

Core authors play a pivotal role in shaping research directions and advancing scholarly discourse. As illustrated in Figure 3, the quantitative overview of leading contributors in the field of psychological burden related to HIV stigma reveals a relatively concentrated landscape of expertise. Jerome T. Galea emerges as the most prolific author with four publications, indicating a strong and sustained commitment to the topic (Galea et al., 2021, 2022). Close behind are John E. Pachankis and Jennifer T. Tran, each with three publications (Pachankis et al., 2015; Tran et al., 2023), indicating their active engagement and continued contributions to the field.

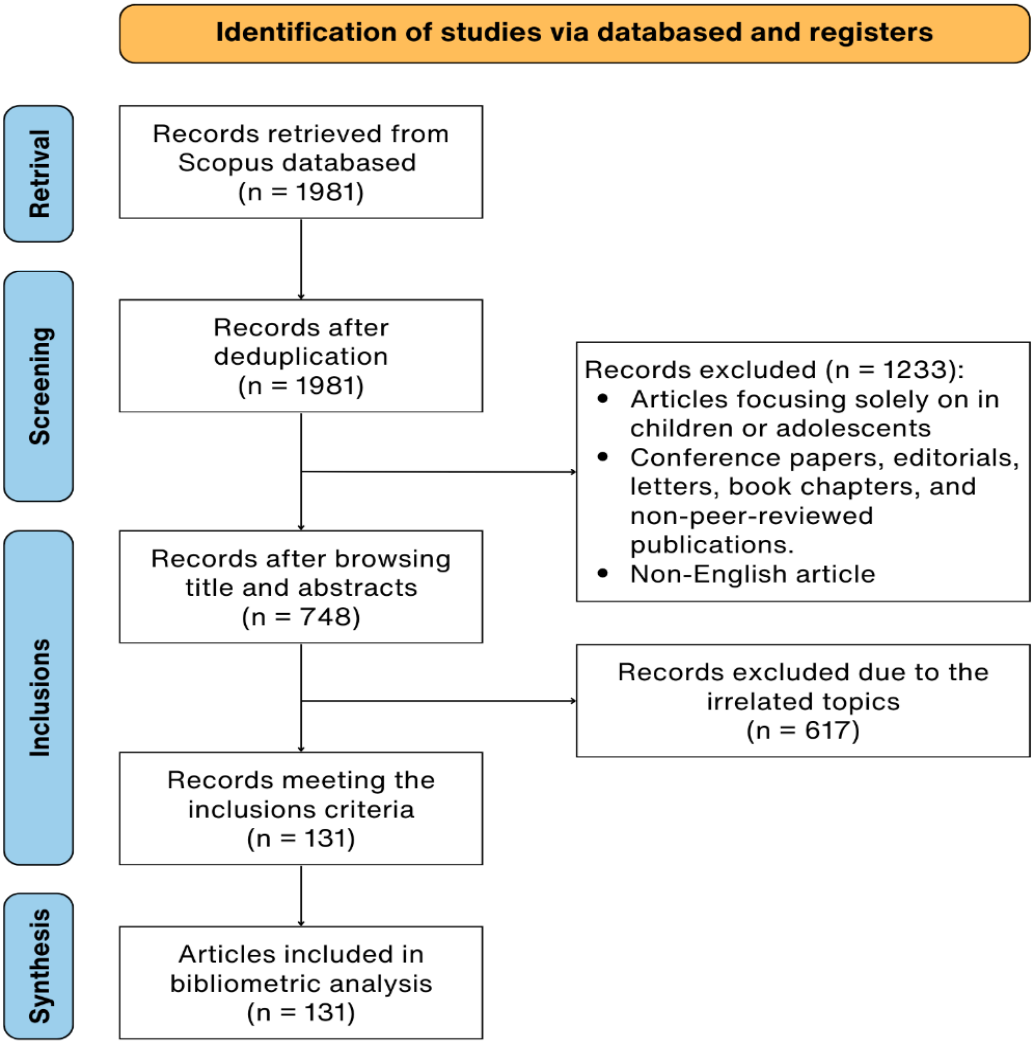


**Figure 1.** PRISMA Flowchart

Figure 3 also shows that a broader group of scholars has each published two articles (Catona et al., 2016; Cipollina et al., 2022; Kwesell & Jung, 2019; Pachankis et al., 2015; Tran et al., 2023). While their individual output is more modest, their collective work represents a diverse and meaningful body of research that enriches the academic conversation.

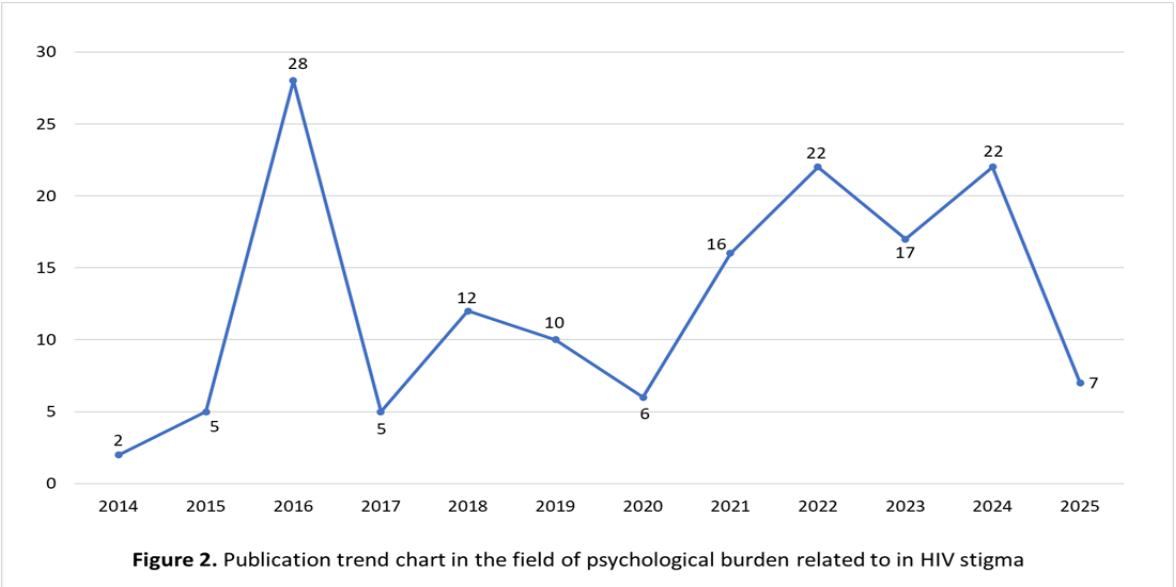


**Figure 2.** Publication trend chart in the field of psychological burden related to in HIV stigma

The prominence of these authors demonstrates the formation of an emerging network of dedicated researchers who are advancing the understanding of HIV-related stigma and its psychological impacts. Their contributions support both theoretical development and the design of interventions aimed at alleviating the mental health burden experienced by affected individuals (Figure 3).

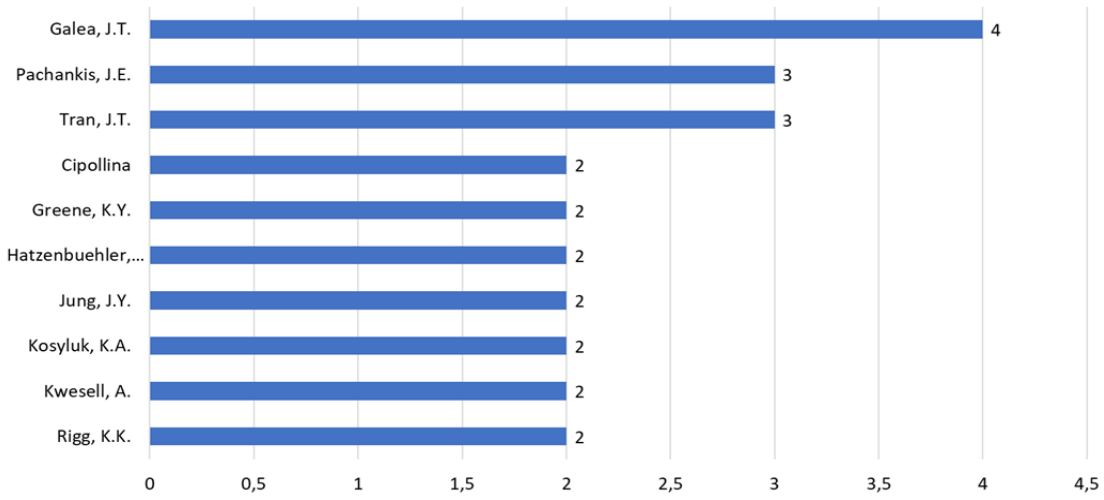


**Figure 3.** Relevant quantitative information of core authors in the field of psychological burden related to in HIV stigma

### *3.3 Quantitative analysis of countries*

The geographical distribution of research output offers valuable insight into global engagement with the psychological burden of HIV stigma. As shown in Figure 4, the United States dominates the field with 64 publications—far surpassing all other countries and highlighting its central role in advancing this area of study. China and the United Kingdom follow with 10 publications each, reflecting emerging and sustained interest from both regions. Canada and South Africa each contributed six publications, while Australia and Hong Kong each produced five, suggesting moderate but meaningful involvement. Other contributors include India (4), Germany (3), and Malaysia (3), further broadening the international scope.

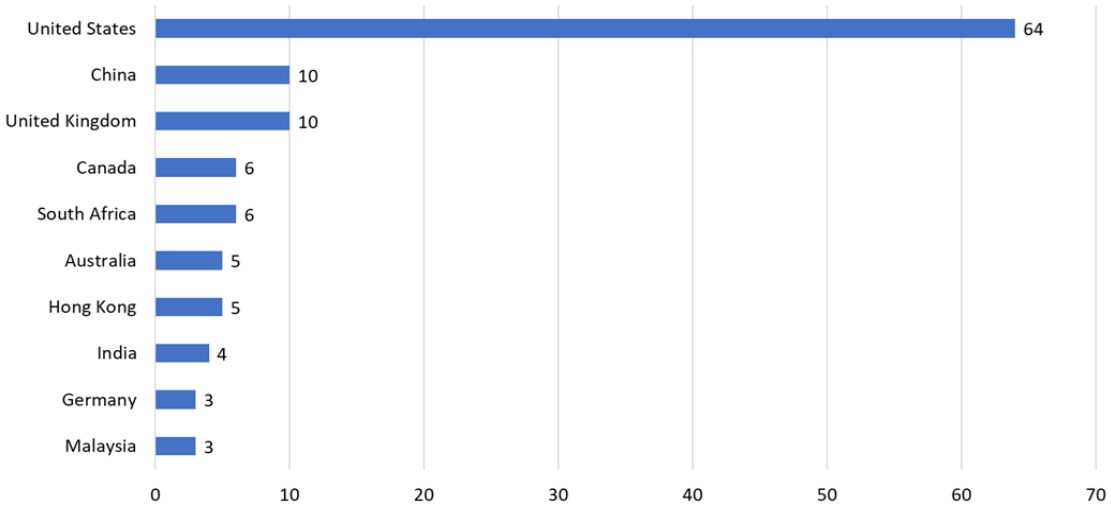


**Figure 4.** Major countries with a large publication volume in the field of psychological burden related to in HIV stigma

This distribution reflects a concentration of research in high-income countries with robust academic infrastructures. However, the presence of countries like South Africa and India also indicates growing scholarly attention in regions directly affected by the HIV epidemic. This pattern not only affirms the global relevance of the issue but also reveals disparities in scholarly investment across different regions.

### *3.4 Keywords co-occurrence network*

To explore the conceptual landscape and thematic progression in the literature on the psychological impacts of HIV-related stigma among adults, a keyword co-occurrence network was constructed using bibliometric data from the Scopus database (Figure 5). Created using VOSviewer, this visualization illustrates how frequently author-assigned keywords appear together in the literature, with node size indicating keyword frequency, line thickness representing the strength of co-occurrence, and colors reflecting distinct thematic clusters. At the heart of the network, stigma emerges as the most frequent and central keyword, underscoring its foundational role in HIV-related mental health research. Its strong connections to terms such as HIV, mental health, discrimination, and mental illness stigma highlight its multidisciplinary relevance, bridging psychosocial experience with structural and systemic factors. This centrality reflects existing theoretical frameworks that conceptualize stigma as both a personal stressor and a broader societal force, with implications for treatment adherence, care engagement, and psychological functioning (Wiginton et al., 2023).

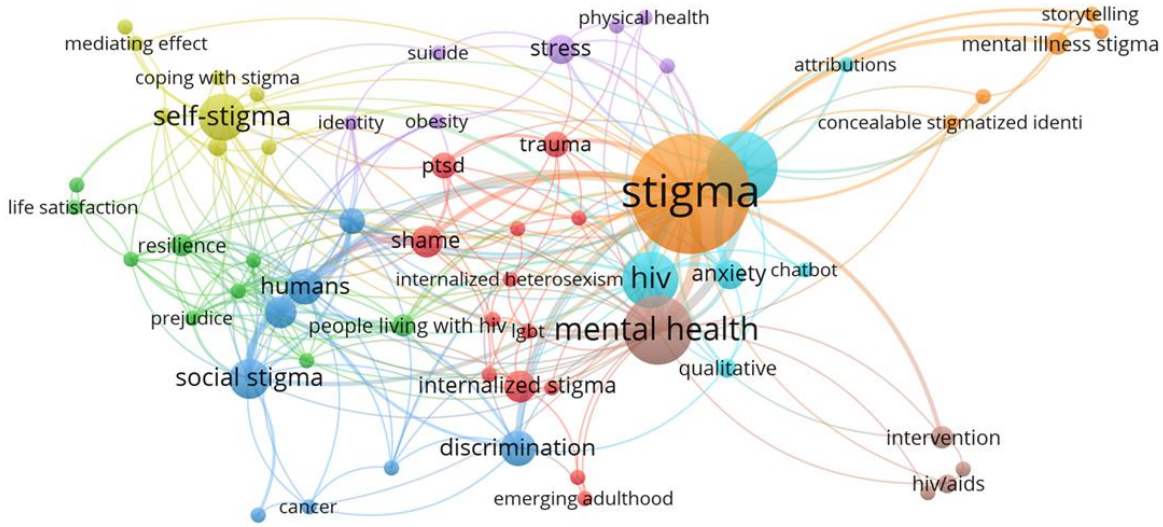


**Figure 5**. Keywords co-occurence network from Scopus databased

Surrounding this core are multiple thematic clusters. The light blue cluster emphasizes the internalized psychological toll of stigma, particularly among people living with HIV. Frequently appearing terms like internalized stigma, anxiety, qualitative, and people living with HIV signal research rooted in subjective experiences and mental health outcomes such as depression and emotional distress (Ursoiu et al., 2018). The emphasis on qualitative methods reflects a commitment to capturing lived experiences and nuanced emotional responses, especially among younger individuals navigating identity development and health challenges. The brown cluster expands this scope to the interplay between mental health and healthcare engagement, exploring how stigma disrupts self-efficacy, trust, and adherence. This body of work focuses not only on emotional burden but also on the structural and interpersonal mechanisms that reduce access to care. Intervention-focused studies and qualitative designs suggest a trend toward integrative, practical solutions embedded within mental health and HIV service frameworks (Hempel et al., 2021).

Meanwhile, the red and purple clusters concentrate on the trauma-related dimensions of stigma, highlighting its role as a chronic psychosocial stressor. Key terms such as shame, trauma,

PTSD, stress, and self-blame reflect how stigma intertwines with past adversity, marginalization, and chronic emotional strain (Hahm et al., 2017; Meyers-Pantele et al., 2022). Research in this domain often uses minority stress and syndemic models to show how compounded stressors elevate vulnerability to depression, anxiety, and physiological consequences. The appearance of chronic pain and fatigue points to a growing understanding of stigma's somatic manifestations, reinforcing the need for trauma-informed and holistic interventions. In contrast, the green cluster shifts focus to resilience and protective factors. Anchored in keywords like resilience, friend, life satisfaction, and anticipated HIV stigma, this domain explores how social support, identity affirmation, and community connection can buffer against psychological harm (Brener et al., 2020; Turan, Budhwani, et al., 2017). It underscores a strengths-based orientation, showing how relationships and peer networks foster emotional well-being and mitigate the adverse impacts of stigma.

The yellow cluster is more methodological, reflecting advances in how stigma is measured and operationalized. Terms like self-stigma, coping with stigma, and mediating effect reveal the field's growing interest in unpacking how stigma operates through specific psychological and social pathways. Studies in this cluster often rely on validated tools and mediation models to dissect stigma into components—enacted, internalized, and anticipated—and explore their distinct effects on mental health (Hempel et al., 2021). Finally, the dark blue cluster emphasizes structural and societal perspectives. It includes terms such as social stigma, discrimination, and cancer, indicating how stigma operates across multiple domains and often intersects with other health conditions. This broader lens represents a shift toward syndemic thinking and structural interventions, calling attention to the role of institutions, policies, and societal norms in perpetuating stigma (Wiginton et al., 2023). From a clinical nursing standpoint, these clusters can help identify priority areas for patient education, stigma-mitigation protocols, and psychosocial support planning.

### *3.5 Temporal keyword analysis: Thematic evolution*

The temporal keyword analysis (Figure 6) reveals a clear thematic evolution in the literature on the psychological burden of HIV stigma from 2014 to 2025. Early research primarily focused on documenting the prevalence and emotional toll of stigma, with depression emerging as the most dominant and persistent theme throughout the timeline (Ashaba et al., 2019; MacLean & Wetherall, 2021). This emphasis reflects long-standing concerns about the psychological consequences of HIV-related stigma, especially in relation to emotional distress and mental health outcomes. Closely associated with depression were frequently co-occurring terms such as anxiety, distress, and shame, indicating an initial preoccupation with internal emotional struggles among people living with HIV (Brener et al., 2020; Hahm et al., 2017; Meyers-Pantele et al., 2022).

Over time, the thematic focus deepened to explore the mechanisms through which stigma affects mental health. Keywords such as internalized stigma, self-blame, concealment, and outness gained prominence, reflecting a growing interest in how external stigma becomes internalized and can be psychologically damaging (Cipollina et al., 2022; Katz et al., 2021). This shift indicates a conceptual turn from simply identifying emotional outcomes to examining the internal processes—such as identity conflict and social withdrawal—that mediate the relationship between stigma and mental illness (Dévieux et al., 2022; Pachankis et al., 2015).

As the field matured, themes related to adaptation and resilience began to emerge. Around the mid-2010s, terms such as resilience, psychological resilience, and self-concept became more visible, signaling a growing interest in strengths-based approaches (Beichler et al., 2023; Dévieux et al., 2022; Liboro et al., 2021). Rather than framing individuals solely as passive recipients of stigma's effects, newer research began to investigate how people resist, reinterpret, and cope with stigma in empowering ways. This marks an important epistemological shift—toward understanding not only vulnerability but also the psychological resources and social factors that foster recovery and well-being (Rzeszutek et al., 2021; Wen et al., 2022).

Parallel to this, there was a noticeable expansion in focus from the individual to the social and systemic levels. Terms such as public stigma, negative attitudes, and information exposure suggest increasing scholarly attention to how stigmatizing beliefs form in society and can be challenged through public health messaging and education (Pantelic et al., 2019; Wagner et al., 2014). The emergence of healthcare providers and disclosure points to institutional dynamics,

particularly in clinical environments, where stigma can either be perpetuated or reduced through provider behavior and structural policies (Okpua & Godwin C, 2023; Spence et al., 2022; Steward et al., 2022).

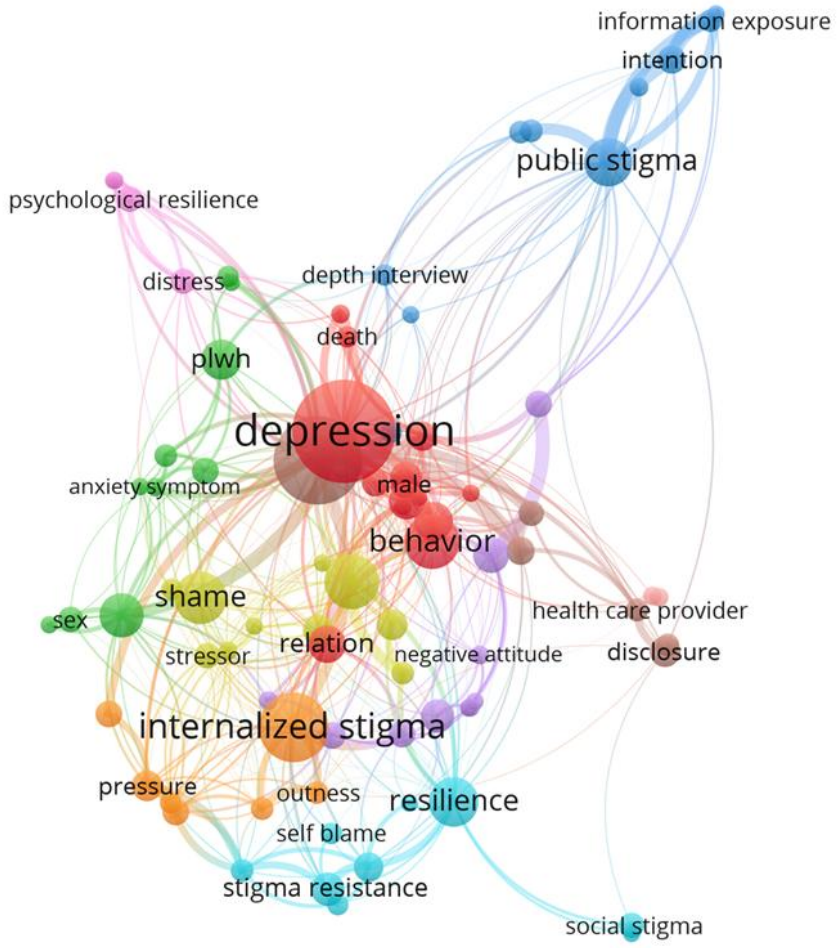


**Figure 6**. Thematic development from 2014 to 2025

In recent years, the literature has also begun to account for intersectional identities and contextual nuances. Keywords reflecting gender, sexuality, and relational dynamics—such as male, sex, and relation—suggest a shift toward more personalized, culturally sensitive (Amal et al., 2024; Haeuser et al., 2022; Puckett & Levitt, 2015). This evolution reflects a recognition that stigma is not experienced uniformly but is shaped by intersecting identities and social positions (Filiatreau et al., 2024).

## 4. Discussion

The findings of this bibliometric analysis provide a comprehensive and nuanced view of the evolving research landscape surrounding the psychological burden of HIV-related stigma among adults. As the introduction outlined, stigma remains a persistent and complex barrier to psychological well-being, intersecting with numerous social and structural determinants. The temporal trends observed in this study reflect both the emerging status and growing scholarly commitment to addressing this issue. While there was little to no academic output on the psychological effects of HIV stigma prior to 2014, a surge of interest emerged in the years that followed, particularly from 2016 onward. This pattern underscores a delayed yet increasing recognition of the psychosocial dimensions of HIV—a shift from a primarily biomedical focus to one that increasingly incorporates mental health, social identity, and lived experience into the research agenda—all of which are central to holistic nursing care and patient-centered mental health interventions (Chan & Mak, 2021; Liboro et al., 2021; Mukerji et al., 2023).

The authors' analysis reveals a concentrated yet dynamic scholarly community. A small group of prolific authors has led the field's development, suggesting the emergence of a specialized research network dedicated to unpacking the mechanisms and impacts of HIV stigma. Though the author landscape remains relatively compact, it is steadily expanding, indicating potential for increased collaboration and diversification of perspectives. These researchers have played an important role not only in theorizing stigma but also in generating empirical evidence that informs stigma-sensitive care approaches, particularly in nursing and allied health disciplines (Bradley et al., 2018; Galea et al., 2022; Machowska et al., 2020).

The geographical distribution of research outputs further emphasizes the concentration of scholarly activity in high-income countries, particularly the United States. This reflects broader trends in global academic publishing and funding access, but also raises concerns about representativeness and contextual relevance. The participation of countries such as South Africa and India, however, is an encouraging sign of growing attention in regions with high HIV prevalence (George & McGrath, 2019; Govender et al., 2017; Steward et al., 2022). The inclusion of voices and experiences from these areas is crucial, especially when considering the social and cultural specificity of stigma and its psychological effects. A more equitable global research effort would strengthen the field's ability to inform locally relevant interventions and international policy frameworks (Bekker et al., 2018).

At the thematic level, the keyword co-occurrence and clustering analyses illustrate a robust and maturing conceptual structure. Stigma consistently appears as the central construct, interconnected with terms such as mental health, discrimination, and depression. This reinforces the idea that stigma is not merely an ancillary issue but a core determinant of psychological outcomes in people living with HIV. The surrounding thematic clusters provide insight into how stigma research has diversified. Initial emphases on internalized stigma and emotional distress have evolved into more integrated models that resonate with nursing frameworks, including trauma-informed care, resilience-building strategies, and patient advocacy roles (Brener et al., 2020; Chi et al., 2024; Fabian et al., 2020; Hill et al., 2019). These developments suggest a field moving from descriptive documentation of psychological suffering toward more sophisticated, explanatory frameworks that account for individual, interpersonal, and structural dimensions.

The temporal analysis of keyword trends further reveals a clear trajectory in the field's intellectual evolution. Earlier studies centered on emotional outcomes, particularly depression and anxiety, mark the foundational stage of the literature. However, a noticeable shift toward internal psychological mechanisms, such as identity conflict, self-blame, and concealment, suggests deeper engagement with the ways stigma becomes internalized and manifests psychologically (Cipollina et al., 2022). This trend is followed by the emergence of strength-based and recovery-focused approaches, highlighting resilience, self-concept, and social support as protective factors (Brener et al., 2020; George & McGrath, 2019; Tang et al., 2024). The appearance of intersectional keywords related to gender, sexuality, and relationships indicates growing awareness of how stigma is experienced differently across social identities (Wiginton et al., 2022). Finally, recent studies reflect methodological refinement, with increased attention to mediation, coping strategies, and behavioral intention, signaling a turn toward intervention-oriented research (Ahmad et al., 2021; Beichler et al., 2023).

Overall, the field has progressed significantly in the past decade, evolving from foundational work documenting harm to more complex, systemic, and strengths-based investigations. This transition mirrors broader shifts in public health and psychological science toward integrated, person-centered, and socially aware models of care. While there is still work to be done in terms of global representation and cross-disciplinary engagement, the existing literature provides a strong foundation for the development of culturally sensitive, evidence-informed interventions aimed at mitigating the psychological effects of stigma in people living with HIV.

## 5. Implications and limitations

The findings of this bibliometric analysis provide several actionable implications for nursing practice in addressing the psychological burden of HIV-related stigma. First, the persistent prominence of depression, anxiety, and internalized stigma across the literature highlights the need for routine mental health screening and psychosocial assessment in HIV care. Nurses can integrate validated tools such as the Patient Health Questionnaire (PHQ-9) or the Generalized Anxiety Disorder scale (GAD-7) into routine visits to detect early signs of distress. Early

identification enables timely referral to counseling or the integration of brief psychosocial interventions into nursing care.

Second, the emergence of resilience and coping as central research themes underscores opportunities for nurse-led interventions. Nurses can foster resilience through stigma-sensitive therapeutic communication, which entails validating patients' lived experiences, avoiding judgmental language, fostering trust, and addressing fears of stigma or disclosure. Psychoeducation should cover topics most relevant to people living with HIV (PLHIV), including strategies for antiretroviral therapy (ART) adherence under stigma-related stress, stress and anxiety management techniques, safe disclosure practices, and building supportive social networks. In addition, structured peer-support initiatives facilitated by nurses, such as support groups or mentorship programs, can strengthen social connections and promote empowerment.

Third, trauma-related stigma themes identified in this review emphasize the importance of adopting a trauma-informed approach in nursing care. This involves creating care environments that promote safety, trustworthiness, choice, collaboration, and empowerment to avoid re-traumatization. For example, nurses can ensure private, confidential consultation spaces, use sensitive questioning techniques, and actively involve patients in decision-making about their care.

Fourth, the recognition of intersectionality within stigma research calls for culturally sensitive and context-specific nursing practices. Nurses must tailor stigma-reduction strategies to the unique needs of marginalized groups disproportionately affected by HIV, such as gender and sexual minorities, racial and ethnic groups, and people who use drugs. This can include culturally adapted health education materials, advocacy for nondiscriminatory policies, and collaboration with community-based organizations that serve these populations.

Finally, the methodological and structural themes highlighted in the bibliometric results point to the role of nurses in advancing innovative interventions. Nurses can contribute to stigma-reduction by designing and evaluating community-based initiatives, integrating psychosocial screening into primary care, and collaborating with interdisciplinary teams to embed stigma-sensitive practices into HIV service delivery systems. Together, these implications underscore the central role of nurses in translating research evidence into practical, stigma-sensitive interventions that address the psychological burden of HIV stigma, promote resilience, and improve overall health outcomes for PLHIV.

This study is subject to several limitations. First, it relies solely on the Scopus database, which may exclude relevant publications indexed in other databases such as PubMed or Web of Science. Second, the focus on peer-reviewed journal articles excludes grey literature and region-specific reports that might provide additional insights. Third, while bibliometric tools provide robust quantitative mapping, the interpretation of thematic clusters inevitably involves a degree of subjectivity. Fourth, the dataset covers publications only up to March 2025, potentially omitting the most recent developments. Finally, the implications for nursing practice presented in this study were inferred from the bibliometric trends rather than directly evaluated; future integrative and mixed-method reviews are needed to validate and expand these conclusions. Despite these constraints, the findings establish a strong foundation for guiding future research and advancing stigma-sensitive nursing practices.

## 6. Conclusion

This study reveals a steadily growing body of literature addressing the psychological burden of HIV-related stigma among adults. Since 2014, academic interest has accelerated, reflecting recognition of stigma's complex impact on mental health. While early research focused on emotional distress and internalized stigma, the field has progressively expanded to include resilience, trauma, identity, and systemic discrimination. Nonetheless, scholarly output remains disproportionately concentrated in high-income countries, limiting perspectives from regions most heavily affected by the epidemic.

The findings emphasize the importance of culturally grounded and context-specific research to guide stigma-reduction strategies. Future inquiry should prioritize intersectional approaches and collaborative efforts that extend beyond high-income contexts. Equally, advancing nurse-led and evidence-based interventions will be critical to translating research knowledge into meaningful improvements in mental health and care outcomes for PLHIV. In summary, this bibliometric study fulfills its objectives by mapping the thematic evolution of HIV stigma

research, identifying critical knowledge gaps, and highlighting pathways to strengthen stigma-sensitive nursing practices worldwide.

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**Author contribution**

AW and DNIS were involved in this study design. AW and DNIS collected the data and conducted the data analysis. AW and DNIS contributed to drafting and revising the manuscript.

**Conflict of interest**

The authors declare that they have no competing interests.

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