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The Weight of Stigma: Gendered Mental Health Burdens in Multi-Drug-Resistant TB and the Path Forward Through Patient-Centric Community Care Models

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Abstract Multidrug-resistant tuberculosis (MDR TB) constitutes a substantial public health challenge, particularly in low- and middle-income countries (LMICs), where adherence to treatment is complicated by psychological distress and social stigma. Women, who represent nearly half of MDR TB cases, encounter disproportionate mental health burdens stemming from gender-specific stigma and social isolation. This narrative literature review investigates the intersection of stigma, mental health, and gender within the context of MDR TB care, underscoring the importance of patient-centered community care models as a viable intervention. A narrative review encompassing 76 peer-reviewed articles was undertaken utilizing databases such as PubMed, Elsevier, and Google Scholar, with the application of stringent inclusion criteria centered on gendered psychological burdens and interventions related to stigma. The findings have been classified into three thematic areas: (1) an exploration of the psychological burden of MDR TB through a gender-focused perspective, (2) an analysis of stigma as a principal social stressor through a gendered lens, and (3) an evaluation of mental health and anti-stigma interventions within community-based care frameworks. Research has indicated that patients with MDR TB often experience symptoms of depression and anxiety. Women, in particular, are at an elevated risk attributed to societal expectations, insufficient social support, and responsibilities related to family caregiving. Furthermore, stigma exacerbates this challenge, diminishing adherence to treatment protocols and resulting in inferior health outcomes. In response to these issues, community-based care models that integrate mental health support, stigma reduction initiatives, and patient-centered interventions have exhibited the potential to enhance both psychological well-being and treatment efficacy. Despite these findings, important research gaps remain, such as the absence of extensive quantitative studies on the effects of stigma, the need for gender-specific mental health interventions, and the development of standardized stigma measurement tools in MDR TB. This review highlights the importance of incorporating gender-responsive psychosocial interventions into MDR TB treatment frameworks and advocates for a shift towards comprehensive, patient-centered community care models aimed at reducing stigma and improving treatment adherence for both men and women.

Keywords: *Tuberculosis, Community Care Models, Mental Health, Stigma, Multi-Drug Resistance*

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1. Introduction

In the last decade, drug-resistant tuberculosis has become a significant concern in the field of public health, given the substantial risk it poses to the effective control of tuberculosis globally. According to data from the World Health Organization, in 2022, an estimated 410,000 people were diagnosed with multidrug-resistant or rifampicin-resistant TB (MDR/RR-TB, together MDR TB) [1], with nearly half of these cases affecting women [1]. Additionally, the WHO Global Tuberculosis Report for 2022 noted a concerning trend: There was a three percent increase in MDR TB incidences between 2020 and 2021, with projections indicating further increases [2]. To complicate matters, treating MDR TB involves lengthy and complex regimens, which can contribute to psychological distress and increase the psychological burden among patients. In turn, this can negatively affect treatment adherence and completion [3,4] and perpetuate the cycle of increasing drug resistance. This narrative

literature review focuses on understanding the psychological burden experienced by MDR TB patients from the point of diagnosis to treatment outcome in low- and middle-income countries (LMICs), with a specific emphasis on gender differences and the impact of social stigma on mental health and treatment adherence. The review also explores patient-centric mental health and anti-stigma interventions for both genders within the framework of community care models. A discussion of current research gaps, including a lack of large-scale quantitative studies evaluating the impact of stigma, is also provided. The paper concludes by assessing the limitations of the review and highlights the need for future research, particularly for the creation of standardized stigma measurement tools and culturally sensitive and gender-tailored mental health interventions that better address the unique challenges faced by patients undergoing MDR TB treatment. The primary objective of this narrative literature review is to synthesize current knowledge, highlight critical gaps, and inform the development of more inclusive MDR TB treatment programs. In doing so, this review aims to advance the broader discourse on gender disparities in infectious disease management and emphasizes the urgent need for patient-centered, gender-sensitive strategies to improve treatment adherence and overall well-being.

2. Methods

The PubMed, Elsevier, PloS One, and Google Scholar databases were searched to identify published articles using different combinations of the following keywords: “Drug-resistant tuberculosis”, “MDR TB”, “psychological burden”, “mental health”, “mental well-being”, “gender”, “women”, “social factors”, “stigma”, “community-based care (and interventions)”, “(MDR) community care model”. The selection of databases for this literature review was guided by their broad coverage of public health, infectious diseases, social determinants of health, and community-based interventions. Given the review’s objective of exploring the intersection of mental health, stigma, and community care models, the chosen databases provided a diverse and interdisciplinary range of relevant studies, extending beyond the primarily biomedical and clinical focus provided by other databases such as Medline. Additionally, PubMed already includes a significant portion of Medline-indexed literature, thereby ensuring the inclusion of high-quality sources while also offering access to a wider array of research perspectives relevant to the scope of this review. RefWorks was utilized to cite and manage the articles via the Himmelfarb Health Sciences Library at George Washington University Library program. Out of the 179 articles retrieved, the selection was narrowed to 76 papers using inclusion and exclusion criteria. Literature was included if it was peer-reviewed, written or translated into English, and published after the year 2000. Quantitative, qualitative, and mixed-method studies, as well as cohort and cross-sectional studies, systematic reviews, and meta-analyses, in addition to commentary on the subject, were included if they addressed the psychosocial burden experienced by diagnosed MDR TB patients, focusing on stigma or reviewing anti- stigma and psychological interventions with a community-based approach, with or without a gendered perspective for patients with either TB or MDR TB. Literature with a geographic focus on LMICs and countries with a moderate to high gender inequality index (GII) were included. Additional literature was identified by reviewing the citations of papers that met the inclusion criteria for this review. News articles, books, blogs, studies on the pharmacology of MDR TB medications, pre-treatment or post-treatment studies, and studies focused on children and pregnant women were excluded. Literature that emphasized low-burden TB countries was also excluded. Literature that concentrated on the psychological impact of socio-economic factors aside from stigma and literature focused on the effects of stigma before MDR TB diagnosis and after achieving treatment outcomes fall outside the scope of this review. The findings were systematically organized into three broader descriptive themes: (1) understanding the psychological burden while undergoing MDR TB treatment through a gendered lens, (2) understanding stigma as a key stressor and its impacts through a gendered lens, and (3) reviewing mental health and anti-stigma interventions to improve the quality of life for MDR TB patients within a patient-centric, community-based care model. Figure 1 illustrates the PRISMA methodology utilized.

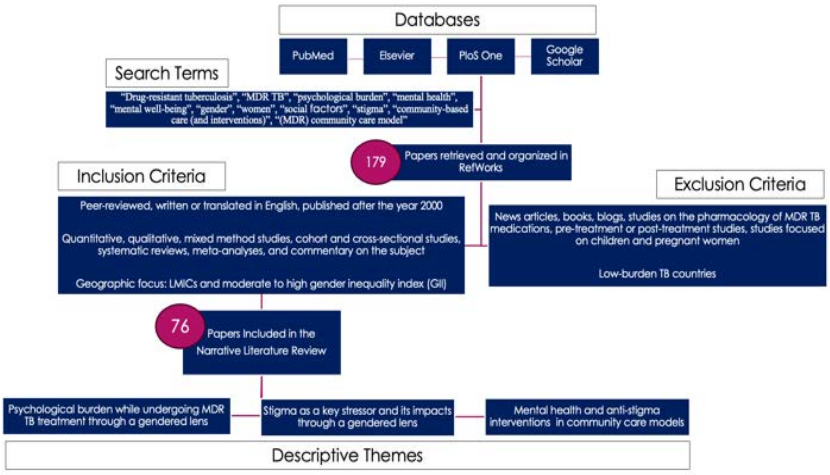

Figure 1. PRISMA Methodology

3. Results and Findings

3.1. Theme 1: Understanding the Psychological Burden Experienced by MDR TB Patients Through a Gendered Lens

A systematic review and meta-analysis that included 40 studies conducted in 20 high-burden TB countries showed that depression, anxiety, and psychosis were the most common mental health disorders reported for MDR TB patients while undergoing treatment [5]. Studies from India [6], Ethiopia [7], and Brazil [8], have reported varying incidences of anxiety, ranging from 6.8 to 54.6%, and depression, ranging from 7.8 to 55.9% for MDR TB patients of both genders. The variation can likely be attributed to diagnostic criteria disparities and study design inconsistencies. However, the challenge to generalize these findings to the broader population remains, even though the studies support the finding of an increased psychological burden for MDR TB patients.

When assessing mental health risks more broadly independent of disease status, the WHO states that women are at greater risk of depression in the population [9], and one meta-analysis study across 63 countries showed that women are inherently at greater risk for experiencing anxiety and depression [10], thereby underscoring the need to look at the psychological burden through a gendered lens. For depression in women, the adjusted prevalence ratio (APR) was 1.23 among those with drug-sensitive TB in a study conducted in Ethiopia [11], and the APR was even higher at 1.90 for women with MDR TB in Punjab, Pakistan [12]. A smaller hospital study in China found that women undergoing MDR TB treatment tended to experience more severe anxiety, particularly at moderate levels and above [13]. It should be noted that extrapolating these findings to broader populations may be challenging due to the studies' small sample sizes. This constraint highlights the need for more extensive cohort and cross-sectional studies to foster a better understanding of the psychological burden experienced by female MDR TB patients.

Lastly, the mechanisms linking MDR TB and depression and anxiety for both genders appear to be driven by the extreme seriousness of the condition, a factor that is prevalent in other chronic conditions [14], and the psychological burden is further exacerbated by the broader impacts of the disease on the patient's social life and livelihood [4,11,15,16] as well as the severe side-effects of drugs for MDR TB treatment [17,18,19]. The negative impact of these drivers is seen in both decreased levels of psychological well-being and lack of adherence to MDR TB treatments [3,4] [20].

3.2. Theme 2: Understanding Stigma as a Key Social Stressor through a Gendered Lens

Numerous studies have shown that while there is a multitude of stressors that can increase the psychological burden of patients undergoing MDR TB treatment, stigma emerged as the most common social stressor contributing to anxiety and depression while exacerbating discrimination and lack of social support [5,13,16] [21,22,23,24]. Stigma is a social determinant of health that is shaped and spread by institutional and community norms and interpersonal attitudes [25], and stigma occurs at all levels from self-stigmatization to stigma experienced from family members, health care providers, and the community, which can pose a significant challenge for MDR TB patients of both genders [26]. When looking at stigma through a gendered lens, seven studies found that women experienced more social stigma than men while undergoing treatment for either TB or MDR TB [27,28,29] [30,31,32,33], four studies found no differences in experiencing stigma between men and women [34,35,36,37], and two studies from China reported that men faced a more significant stigma burden than women [38,39]. The findings suggest that stigma tends to cut across genders. Nonetheless, this finding must be approached with caution, given the studies' small sample sizes and the different protocols used for measuring stigma. These elements constitute substantial limitations of the studies and may make it difficult to generalize this pattern across broader populations and varied cultural contexts.

3.2.1. Stigma Fuels the Same Disease-Specific Fears for Both Genders, But Fears of Consequences Differ by Gender

Stigma fueled a common disease-specific fear related to the transmission of the airborne infection to others for both genders, and stigma related to potential social consequences exacerbated the concerns of losing social status, social isolation, failed marriage prospects, and neglect from family, irrespective of gender [35,40,41]. Differences between genders emerged as men reported greater fear of stigma related to their work environment and feared the loss of their jobs with psychological issues being tied to carrying the financial burdens as the breadwinners [30,42,43]. In three studies from Bangladesh, women reported more significant fears of stigma from family members, as well as psychosocial consequences of depression, feelings of isolation, and lack of proper care from their families [29,30,44]. The six studies that examined the types of gendered fears and consequences associated with stigma were conducted in India and Bangladesh and may not apply to other countries. More studies are needed to account for cultural differences in other countries and regions.

3.2.2. Lack of Social Support Fueled by Stigma Increases the Psychological Burden for Women

The existing body of research suggests that stigma appears to have a more significant negative influence on the social support that family members provide to female MDR TB patients, leading to an increase in the psychological and emotional burden placed on women. A qualitative study in Bangladesh found that male wards were filled with family members providing cooking, cleaning, and emotional support, whereas the female ward had few carers, and women predominantly cooked and cared for themselves [45]. A qualitative study conducted in three countries, including Bangladesh, Malawi, and Southern India [44], another qualitative study conducted

in Malawi [46], and a statistical analysis conducted in India [43], further supported the notion that men received preferential care from their family during MDR TB treatment. By linking preferential care to the psychological burden, the qualitative study in Bangladesh confirmed that the lack of social support led to an increase in female patients' concerns about how their children would be cared for in their absence, in turn, further increasing their anxiety and lowering mood [45]. While not disaggregated by gender, two studies have found that low social support is associated with greater levels of depression in drug-sensitive TB patients in Ethiopia [11], and a study of hospitalized MDR TB patients in Nigeria showed that patients who were supported by their own families reported fewer psychosocial concerns compared with those who were not [47]. The literature effectively highlights the gender disparity in the lack of social support fueled by stigma for MDR TB patients. Yet, it could benefit from a deeper analysis of cultural factors and a more critical examination and standardization of the methodologies used, including stigma measurement.

3.2.3. Effects of Stigma on Treatment Outcome and Suicidal Ideation Among Women

Across both genders, studies have shown that patients who internalize stigma have feelings of low self-esteem, leading to poorer TB treatment compliance in India [35], Zambia [48], and Ethiopia [49]. Additionally, two studies found that stigma disproportionally contributes to a lack of adherence to treatment [23,50] and even treatment failure in patients with MDR TB, exerting a severe impact by fostering feelings of melancholy and self-hatred, and impeding patients' access to necessary medical care [51]. A qualitative study in Ghana [52] and one qualitative study in Uganda [53] also found that lack of social support caused by stigma, especially from close family members, was a significant determinant in defaulting from treatment for women. Furthermore, shame and stigma were reported to increase the likelihood of self-treatment and incorrect use of anti-tuberculosis drugs, most commonly at the initial stages of illness for both genders [54]. However, for women, the consequences of stigma on mental health may be more severe than non-adherence by increasing the risk for unfavorable treatment outcomes in the form of suicide. One qualitative study in Kolkata found that the consequences of stigma for women included feelings of guilt, non-disclosure, and suicidal ideation [41]. To support this finding, a quantitative study in Ethiopia identified that being female as the primary factor and experiencing stigma along with depression were statistically associated with higher risks for suicidal ideation and attempts made to commit suicide [55]. A qualitative study of interviews with female MDR TB patients in India further provided evidence that women were either told to commit suicide by their family members or they themselves proposed this as a solution to their healthcare provider [46]. While these findings offer sufficient evidence for the negative impacts of stigma on treatment outcomes, to strengthen the case for gender-tailored interventions, additional quantitative studies on gender disparities that also assess suicidal ideation and suicide attempts made by women would be beneficial.

3.3. Theme 3: Integrating Mental Health and Anti-Stigma Interventions into Community Care Model Service Offerings

National TB Programmes across the globe are designed and implemented with a top-down approach. This hierarchical model tends to exclude patients and communities from participating in the design of TB interventions and limits the inclusion of patient-centric service offerings. Traditionally, MDR TB treatment has also been confined to hospitals or facility-based settings, which is driven by a multitude of factors, such as the need for monitoring complex drug regimens, managing adverse side effects, ensuring treatment adherence, and mitigating the risk of community transmission [56]. Facility-based interventions have additional limitations, as they require regular visits by those affected, which imposes financial and logistical burdens on the patients and their families, and frequent travel outside the home may exacerbate exposure to social stigma and further disrupt social support from family members [56].

In this context, patient-centric, home- and community-based care interventions emerge as a viable alternative, especially with the inclusion of mental health interventions as part of the community care model service offerings. Rather than adopting a one-size-fits-all approach, community care models can be tailored to specific needs and can account for local socio-economic and cultural factors. When effectively implemented, community-based care can improve treatment adherence and success rates, reduce loss to follow-up, and minimize delays [57], and studies found that community and home-based care for MDR TB patients had more successful treatment outcomes [58,59] than centralized, facility-based services [60], with treatment success rates being up to 20% higher [56]. Community-based care can increase access to TB treatment services by making them available closer to a person's home through engaging community health workers, thereby reducing extensive travel and decreasing financial burdens for patients incurred from hospital-based interventions [61,62]. Community-based interventions can also reduce stigma-related psychological burdens by enabling patients to stay at home, thereby decreasing fears of transmission and allowing for improved opportunities for social support from family members [63]. These community care models have shown to be more cost-effective, especially in low-resource settings [56,64,65,66].

Lastly, community-based care was seen as preferable to hospital-based care by patients, families, communities, and healthcare workers and was perceived as safe, conducive to recovery, well suited for facilitating psychosocial support, and allowed for more free time and earning potential for patients and caretakers [67,68]. From the existing literature, the following psychosocial interventions should be incorporated into MDR community care models to improve mental well-being, decrease stigma, and ultimately improve MDR treatment outcomes, especially for women. Although preferable, none of the existing MDR TB community care models incorporate all interventions concurrently and appear

limited to two interventions at most, likely due to funding constraints.

3.3.1. Depression Screening

Based on the issue of not only the increased occurrence of anxiety and depression in MDR TB patients but also the increased double burden of anxiety and depression of female MDT TB patients, there is a need for routine screening and provision of treatment for depression throughout the MDR TB care continuum, particularly for women. Integrating screening and depression treatment options into MDR TB community care models has proven to improve the mental well-being of both genders, as evidenced in a study in Bangladesh [45] and similar work in other LMIC settings, such as Pakistan [12], Nigeria [46], and Uganda [67]. Furthermore, National TB Programmes would also benefit from integrated depression screening and mental health treatment options. A recent survey of National TB Programme (NTP) directors from 26 high-burden TB countries found that while only two NTPs regularly screened for depression, 17 directors would consider integrating mental health treatment into national TB guidelines and services [69]. This demonstrates the need to incorporate depression screening into routine MDR and TB care regardless of framework. However, additional research on the efficacy of such interventions to promote broader incorporation of these services is needed.

3.3.2. Psychological Counseling for Patients and Family Members

The concerns from increased levels of anxiety and depression, exacerbated by disease-related stigma, highlight the need for professionally trained counselors to equip MDR TB patients, especially women and their families, to cope with the illness with need-based psychosocial interventions throughout the patient care cascade from the point of diagnosis until completion of treatment. An assessment of two home-based interventions in Africa that incorporated psychological counseling for MDR TB patients and their families was found to be effective and affordable [58,59]. Additionally, two more studies, one in Nicaragua [70], and one in Zambia [71], provide models for carrying out family-centered counseling via home visits as part of a community care model. Interventions addressing female-specific issues related to suicidal ideation are currently lacking but should also be addressed through psychological counseling.

3.3.3. Patient Peer and Social Support Groups

Forming peer and social support groups is an increasingly popular intervention and can help to address the issue of isolation from self-stigmatization and loss of social support experienced by women from their families and caretakers. Patient-centered community-based models for TB and MDR TB in Peru [72], Ethiopia [49], and Nicaragua [70] have included TB support groups led by nurses or community health workers to encourage patients to share experiences and support one another throughout treatment. In all three studies, treatment default rates decreased through the intervention [49,70,72], although none conducted female-only support groups. A study in South Africa suggested that TB survivor peer navigators are well-placed to lead support groups in answering questions, fostering a sense of community, and acting as role models [73]. However, while peer group interventions are popular, none of the literature qualitatively or quantitatively assessed their effectiveness in improving well-being or treatment adherence.

3.3.4. Patient and Community Education and Awareness

Improving understanding and raising awareness about MDR TB can help to reduce stigma [74], and the existing literature emphasizes that anti-stigma interventions must occur at all levels – at the individual level, at the family and caretaker level, at the institutional level for healthcare professionals, and at the community level as part of an effective community care model [70,73]. Stigma in patients, families, and the community is primarily due to fear of contagion and lack of knowledge of TB, including gaps in understanding about how effective treatment decreases TB transmission risk [73]. Accordingly, patient-level, family-level, and community-level programs that provide education on TB symptomatology, risks, and treatment options will continue to be necessary [75]. Furthermore, health education materials and strategies that consider financial dependence, lack of autonomy, lack of care, and household roles that impact women's lives need to be developed for female patients, family members, and caretakers [42]. A South African study suggested that community venues, including schools, are potential locations where TB-related education could take place and emphasized the importance of ensuring communities have accurate information to understand how TB can affect anyone, how TB is spread, and how long people with TB remain infectious to others after treatment [76]. One study further suggests that to improve knowledge and reduce misinformation, awareness-raising events led by TB survivors may be a consideration [73], and using short movies [77] could also reduce stigma. To further tailor community engagement toward encouraging women to seek MDR diagnosis and treatment, educating trusted traditional healers within the community [42] and using religious leaders to help facilitate community gatherings as a mode of TB education delivery should be considered since women place trust in religious leaders, especially in low resource settings [41]. The existing literature effectively outlines the importance of multi-level anti-stigma interventions but could benefit from incorporating gender-specific lessons from other stigmatized infectious diseases, such as HIV/AIDS, to further tailor education strategies that address the unique social and cultural barriers faced by women.

4. Conclusions

4.1. Discussion of Findings, Gaps, and Opportunities

Understanding the key findings and gaps in MDR TB research is essential for developing effective interventions to improve treatment adherence and the psychological

well-being of patients going forward. As highlighted in Table 1, the findings illustrate the significant mental health burden among MDR TB patients, particularly women, due to stigma, social isolation, and lack of support. The table also presents key research gaps within the field, including the absence of standardized stigma measurement tools and the need for comprehensively evaluating mental health and anti-stigma interventions within the context of community-based care models.

Table 1. Summary of Findings and Gaps

Theme	Summary of Findings	Research Gaps
Psychological Burden of MDR TB	Depression and anxiety are commonly observed among MDR TB patients; however, women appear to be at an elevated risk of experiencing these psychological burdens more severely due to societal roles and insufficient social support.	There is a pressing need for extensive, large-scale quantitative studies on gender-specific mental health burdens.
Stigma as a Key Social Stressor	Stigma constitutes a significant stressor affecting mental health across genders. Nevertheless, women appear to encounter a more pronounced form of social stigma compared to men, leading to elevated levels of isolation and, consequently, an exacerbation of anxiety and depression.	There exists a lack of standardized tools to measure stigma in MDR TB patients.
Impact of Stigma on Treatment Outcomes	Stigma significantly contributes to non-adherence to treatment regimens and treatment failures for both men and women. Furthermore, suicidal ideation and suicide attempts appear to be more prevalent among women.	Research on gender-specific interventions for stigma and mental health remains scarce.
Community Care Models and Interventions	Community-based care models integrating mental health support, depression screening, patient peer groups, and anti-stigma education, can help to improve treatment outcomes and the psychological well-being of MDR TB patients.	There is a need for the comprehensive evaluation of multiple interventions as part of community-based care models instead of evaluating interventions on a stand-alone basis.

While this review provides insights into key findings from the existing body of literature, there is a significant lack of gender-specific studies that quantitatively look at the impact of stigma on the mental well-being of female MDR TB patients and even female TB patients more generally. The unique challenges experienced by female MDR TB patients related to caregiving roles and social expectations are significantly underexplored. Additionally, the findings presented in this review are likely unique to the relatively small number of participants in the research studies and cannot be extrapolated to the broader population. This significant gap could be filled with large-scale, quantitative cohort and cross-sectional studies that evaluate the specific impact of stigma on female MDR TB patients. Quantitative studies that measure the effects of stigma in varied cultural settings and that link these impacts to the psychological burden carried by both men and women are also needed. Furthermore, even though there is increased interest from global health organizations such as the WHO, in collaboration with the Stop TB Partnership, in integrating mental health services into TB care [78], few studies evaluate mental health interventions for MDR TB patients [49,58,59,70,72], and none quantitatively evaluate tailored interventions for female TB or MDR patients and merely provide suggestions for female tailored coping mechanisms [41,76] for dealing with stigma based on qualitative surveys and interviews. While community care models have been evaluated for their effectiveness, there is a need for more research that assesses the efficacy of multiple mental health and anti-stigma interventions implemented together instead of evaluating stand-alone interventions. Future studies should focus on measuring the effectiveness of grouped interventions and provide quantitative evidence for improvements in mental health burdens, treatment adherence, and quality of life. Future studies should also give particular attention to the impacts of stigma on social support mechanisms and family dynamics experienced by women. Lastly, while stigma is identified as a critical stressor, there is no standardized approach for measuring stigma as it relates to TB or MDR TB. Given that the studies included in this review used distinct protocols for measuring stigma, challenges arise when attempting to compare the effects of stigma through a gendered lens and in varied settings. While the theoretical frameworks for two standardized stigma-measuring tools in the context of MDR TB have been created and peer-reviewed in the literature [79,80], neither tool appears to have been tested in practice to evaluate the effectiveness of anti-stigma interventions.

4.2. Limitations

Several limitations may have constrained the analysis of this review. One such restriction relates to the exclusion criteria, given that literature focusing on the psychological impact of stigma before MDR TB diagnosis and after treatment completion was not incorporated. Critical insights related to the enduring mental health consequences of stigma experienced by female patients may have been omitted, which limits a comprehensive understanding of their psychological well-being throughout the entire continuum of TB care. This review also prioritized literature focused on stigma and mental health interventions within the framework of community-based care models. This approach excluded alternative models that could provide insights into additional psychosocial and anti-stigma interventions. While a narrative review approach allowed for broad thematic exploration, personal biases, and subjectivity determined the inclusion of specific findings while excluding others. Findings related to women's TB health literacy, self-stigmatization, and other social burdens, such as the effects of stigma on marriage prospects and divorce rates, were identified but omitted. Studies on other socio-economic factors, such as increased financial burdens from treatment costs, lack of transportation, and lack of healthful nutrition, were also not explored. These factors likely have additional impacts on the psychological burden of MDR TB patients of both genders, and their omission may limit the ability to obtain a more holistic

and comprehensive understanding of the collective impact on mental well-being.

4.3. Conclusion and Topics for Further Exploration

The purpose of this narrative literature review was to gain an improved understanding of the psychological burden experienced by MDR TB patients in LMICs through a gendered lens, with a particular focus on the effects of stigma. The findings emphasized the double burden of an increased prevalence of depression and anxiety among female patients and revealed stigma and its effects on social support to be a significant social stressor that further exacerbates mental health challenges for women. Moreover, the review validated community care models as a promising framework for improving the mental well-being and treatment outcomes for MDR TB patients when expanded to include mental health and anti-stigma interventions. Based on this literature review, two topics should be explored further: Additional research on gender-specific interventions in the context of other stigmatized diseases, notably HIV, should be conducted to examine lessons learned and identify transferable mental health interventions. Once identified and assessed for efficacy, these interventions could be further tailored towards the needs of women. The newly gender-tailored interventions should also be integrated within the framework of MDR TB community care models as a comprehensive suite of interventions rather than as isolated measures. Lastly, there is a great need for additional research on the standardization and harmonization of stigma measurement approaches and tools. Existing literature in different disease areas may offer valuable insights for enhancing the design and utilization of standardized tools for assessing stigma in the context of MDR TB. Additionally, this cross-cutting research has the potential to improve existing study methodologies and quantitative assessments of interventions aimed at reducing stigma, all while establishing a more robust framework for comparing stigmatization across diverse cultural settings in future studies.

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Statement of Competing Interests

The author has no competing interests. No funding is declared for this article.

List of Abbreviations

APR: Adjusted Prevalence Ratio
LMIC: Low- and Middle-Income Countries
MDR TB: Multi-drug-resistant tuberculosis
NTP: National Tuberculosis Program
TB: Tuberculosis

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