Asia Pacific Academy of Science Pte. Ltd.

Sustainable Social Development 2026, 4(3), 8648.
https://doi.org/10.23812/ssd8648

Article

Factors influencing mental health integration into primary health care in low- and middle-income countries: A qualitative synthesis

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CITATION

Nkansah EO, Boateng D, Owusu-Antwi R, et al. Factors influencing mental health integration into primary health care in low- and middle-income countries: A qualitative synthesis. Sustainable Social Development. 2026; 4(3): 8648. https://doi.org/10.23812/ssd8648

ARTICLE INFO

Received: 13 May 2026
Revised: 16 June 2026
Accepted: 23 June 2026
Available online: 26 June 2026

Abstract: The integration of mental health services into primary health care is a globally recognised strategy for closing the treatment gap in low- and middle-income countries, where up to 90 % of people with mental disorders receive no care. However, existing reviews remain largely descriptive and do not explain how factors across health system levels interact. This qualitative evidence synthesis examined individual, interpersonal, organisational, and policy-level factors influencing mental health service integration into primary health care across LMICs. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 and Joanna Briggs Institute guidelines, six databases were searched from 2000 to 2025, yielding 29 included studies. Data were coded inductively and mapped onto the Socio-Ecological Model. Key barriers included stigma, low mental health literacy, workforce shortages, inadequate infrastructure, and fragmented governance. Key facilitators included community engagement, inter-professional collaboration, and sustained government commitment. A consistent policy-to-individual cascade was identified, whereby financing and governance constraints reduce organisational capacity, weaken provider performance, and erode patient trust. Findings highlight the need for sustained mental health financing, task sharing, continuous workforce training, and embedded community engagement within primary health care structures.

Keywords: mental health integration; primary health care; low- and middle-income countries; qualitative systematic review; socio-ecological model; barriers and facilitators

1. Introduction

The integration of mental health services (MHS) into primary health care (PHC) is central to reducing the large treatment gap in low- and middle-income countries (LMICs), where 75–90% of individuals with mental disorders receive no care [1–3]. PHC provides a cost-effective and accessible platform for mental health delivery, reducing stigma and addressing the co-occurrence of mental and physical conditions [2–4]. Despite this, implementation in LMICs remains constrained by workforce shortages, limited resources, sociocultural stigma, and weak governance [3,5,6].

However, many of these reviews lack methodological depth in qualitative synthesis and do not apply established frameworks for analysing complex system

interactions, and some have examined effectiveness in specific country contexts. However, most syntheses remain descriptive, cataloguing factors rather than explaining how they interact within health systems. A critical limitation is the absence of multi-level analytical frameworks: prior reviews treat determinants in isolation, overlooking how policy, organisational, interpersonal, and individual factors interact dynamically [7–9]. Feedback processes, such as how policy-level funding deficits cascade into organisational constraints and ultimately erode service-user trust, remain largely unexplored. Service-user perspectives are also underrepresented, limiting the development of person-centred integration models [10–12]. While previous reviews have identified barriers and facilitators to mental health integration, they largely adopt descriptive approaches that do not explain how these factors interact across system levels. There remains limited synthesis of cross-level dynamics and feedback mechanisms, particularly in LMIC contexts.

This review addresses these gaps by applying the Socio-Ecological Model (SEM) [12–17] as an analytical framework to examine how multi-level factors interact to shape MHS integration into PHC across LMICs. Unlike prior studies, this synthesis focuses on cross-level interactions and systemic interdependencies, offering a more comprehensive explanation of implementation challenges and enablers. The inductive use of the SEM also provides a methodological contribution: themes emerged from 124 inductively generated codes, with confidence in synthesised findings formally assessed using the JBI ConQual approach.

The review synthesises 29 studies spanning sub-Saharan Africa, South Asia, the Middle East, Southeast Asia, and Latin America (2000–2025), enhancing the transferability of findings to diverse LMIC settings. By centring the interplay among individual, interpersonal, organisational, and policy-level factors, this synthesis provides implementable, context-sensitive guidance for strengthening MHS integration within PHC in resource-limited contexts.

1.1. Conceptual framework

This review is guided by the Socio-Ecological Model (SEM), which conceptualises health systems as interacting layers comprising individual, interpersonal, organisational, and policy-level influences. Unlike linear approaches, SEM enables examination of how determinants operate as interdependent systems rather than isolated factors. In this study, SEM is used as both an organising and analytical framework to identify cross-level interactions influencing mental health service integration. Attention is given to feedback mechanisms, where constraints at one level cascade through organisational structures and interpersonal dynamics to shape individual-level outcomes such as service utilisation and trust. This framework supports a systems-oriented interpretation of integration challenges and enables identification of key leverage points for policy and practice.

1.2. Novelty of study

This review makes three contributions beyond prior descriptive syntheses. First, it applies the SEM as an analytical framework to reveal cross-level interactions rather than cataloguing isolated factors, demonstrating how financing and governance

constraints cascade through organisational and interpersonal levels to erode patient trust. Second, it advances methodological rigour by formally assessing confidence in findings using the JBI ConQual approach. Third, it highlights the limited inclusion of service-user perspectives across the existing evidence base—a structural gap that risks entrenching system-centred over person-centred integration models. By integrating evidence across

1.3. Review objectives(s)

To analyse the interactions between individual, interpersonal, organisational, and policy-level factors that influence the integration of adult mental health services (for populations aged 18 years and above) into primary health care in LMICs between 2000 and 2025.

1.4. Review question(s)

How do individual, interpersonal, organisational, and policy-level factors interact to influence the integration of MHS into PHC in LMICs, and what are the dynamic relationships between these factors across different LMIC contexts?

2. Methods

2.1. Design

This qualitative systematic review followed established methodological guidance, the Cochrane Handbook for systematic reviews [18,19], JBI methodology for qualitative evidence synthesis and the PRISMA 2020 reporting guidelines. The Joanna Briggs Institute (JBI) provides internationally recognised methodology and appraisal tools for qualitative evidence synthesis, including standardised critical appraisal checklists, data extraction templates, and the ConQual approach for assessing confidence in synthesised findings. The review was prospectively registered on PROSPERO (CRD42024533735). Six databases were searched from 2000 to 2025: PubMed, Embase, Scopus, CINAHL, Cochrane Library, and Web of Science. Twenty-nine studies met the inclusion criteria and were synthesised.

The SEM served as an organising and interpretive framework. Inductive coding allowed themes to emerge from the data, which were then deductively mapped onto the four SEM levels (individual, interpersonal, organisational, policy) to examine cross-level interactions and system dynamics. Analysis proceeded in five steps: (1) inductive coding of study findings using JBI SUMARI, generating 124 initial codes; (2) mapping codes to four SEM levels (individual, interpersonal, organisational, policy); (3) identifying cross-level interactions; (4) synthesising recurring interaction patterns into analytical themes; and (5) iterative refinement to ensure a systems-level interpretation. Researcher bias was mitigated through independent dual coding, consensus-based resolution of discrepancies, and reflexive memo-writing. Inter-rater agreement between the two independent coders was assessed using Cohen's kappa, yielding a coefficient of $\kappa = 0.81$, indicating strong agreement; remaining discrepancies were resolved through discussion and, where necessary, by consulting a third reviewer.

2.2. Eligibility criteria

Inclusion followed the PICo framework. Studies published between January 2000 and December 2025 involving adults aged 18 years and above were included. Eligible participants included service users, caregivers, frontline PHC providers, health system managers, and policymakers. Studies focused on MHS integration in PHC settings across LMIC countries (UN WESP classification) and using qualitative or mixed methods designs with a substantial qualitative component were included. Purely quantitative studies were excluded because this review aimed to understand the lived experiences, processes, and contextual factors shaping integration, objectives best addressed through qualitative evidence; quantitative studies were therefore outside the scope of this qualitative evidence synthesis. Grey literature and non-English publications were also excluded.

2.3. Study selection and quality appraisal

Search results were exported to Rayyan (a web-based, AI-powered systematic review management platform that facilitates deduplication and blind, collaborative screening of titles and abstracts) for deduplication and screening. Two independent reviewers screened titles and abstracts, with a third reviewer resolving disagreements. Full texts of 37 articles were assessed, of which 29 met the inclusion criteria. Methodological quality was appraised using the JBI Critical Appraisal Checklist for Qualitative Research. All included studies were retained regardless of minor limitations; quality ratings informed differential weighting during synthesis.

2.4. Data extraction and synthesis

Two independent reviewers used JBI SUMARI (the System for the Unified Management, Assessment and Review of Information, a web-based platform developed by the Joanna Briggs Institute to support the management, critical appraisal, extraction, and synthesis of evidence) to extract study details, findings, limitations, and recommendations. For mixed-methods studies, only qualitative data were synthesised; quantitative findings provided contextual background. The review adopted a thematic synthesis approach informed by principles of qualitative evidence synthesis and framework synthesis [20–27], drawing on established approaches to qualitative analysis [28,29]. Initial open coding was conducted inductively to capture participants' experiences and implementation factors [28]. Codes were then grouped into descriptive themes before being interpreted analytically [29] through the SEM framework to identify interactions across socio-ecological levels. This combined inductive–deductive approach enabled both data-driven theme generation and theory-informed interpretation. Inductive coding generated 124 initial codes, refined into 18 descriptive themes across four SEM levels and further synthesised into five analytical themes. Confidence in findings was assessed using the JBI ConQual approach, evaluating dependability and credibility across 10 synthesised findings.

2.5. Search strategy

A three-phase search strategy based on JBI guidelines was employed [30]: Phase one (initial database search), phase two (second search using keywords identified),

and phase three (a review of references from identified articles for critical appraisal). Studies published from 2000 to 2025 included capturing contemporary evidence following the World Health Assembly Resolution, which urged integration of mental health into PHC in resource-limited settings, ensuring relevance to modern LMICS policy and implementation contexts while balancing search yield and synthesis feasibility. The search was conducted in the following databases to extract potentially eligible studies for review: PubMed, Embase, Scopus, CINAHL, Cochrane Library, and Web of Science. The search strategy included keywords relating to the concepts of the review, factors, integration, barriers, facilitators, PHC, LMICs, relating to MHS in primary care settings, see Appendix A. The codebook linking codes to descriptive and analytical themes is presented in Appendix B. Confidence assessments are presented in Appendix C.

2.6. Assessment of methodological quality

Eligible studies were appraised by two independent reviewers using the JBI Critical Appraisal Checklist for Qualitative Research [14,30]. A two-stage eligibility decision rule was operationalised. All included studies were retained regardless of minor methodological limitations. Quality appraisal informed the assessment of confidence in the synthesised findings via the ConQual approach, using standardised response options ("yes," "no," "unclear," or "not applicable"). Any disagreements were resolved through discussion or by consulting a third reviewer.

2.7. Assessing confidence in the findings

To ensure the findings were reliable and relevant for policy and practice, confidence in the synthesised findings was assessed using the JBI ConQual approach [30], which evaluates dependability (derived from methodological quality via JBI Critical Appraisal Checklist scores), credibility (rated as unequivocal or unsupported based on supporting evidence strength), and applicability. It is important to note that the ConQual assessment evaluates confidence in each synthesised finding (i.e., the analytical themes generated from the review), not in the individual included studies. The 29 included studies were aggregated to produce 10 synthesised findings representing key patterns across the evidence base. Of these 10 synthesised findings, dependability was high for 7, moderate for 2, and low for 1; credibility was unequivocal for 8 findings and credible for 2, with no downgrades for applicability. This resulted in overall ConQual ratings of high (A, 70 %, $n = 7$), moderate (B, 20 %, $n = 2$), and low (C, 10 %, $n = 1$), confirming strong evidence for key barriers and facilitators such as stigma, workforce shortages, and systemic challenges, while governance-related factors warrant further research. Detailed ratings are presented in Appendix C.

2.8. Ethical Consideration

Since no primary data is being collected, ethical approval was not requested.

3. Results

3.1. Study selection

Database search yielded 2384 results. This figure represents the combined results from all six databases after the removal of duplicates, which is the number used for title and abstract screening. It differs from the initial raw hit counts from individual databases (e.g., 2456 for PubMed, as shown in Appendix A) because the synthesis accounts for the cumulative yield across multiple sources. After removing duplicates, 2176 titles/abstracts were screened. Thirty-seven full-text articles were assessed, with 29 studies meeting the inclusion criteria for final synthesis. The PRISMA flow diagram outlines the selection process (See **Figure 1**).

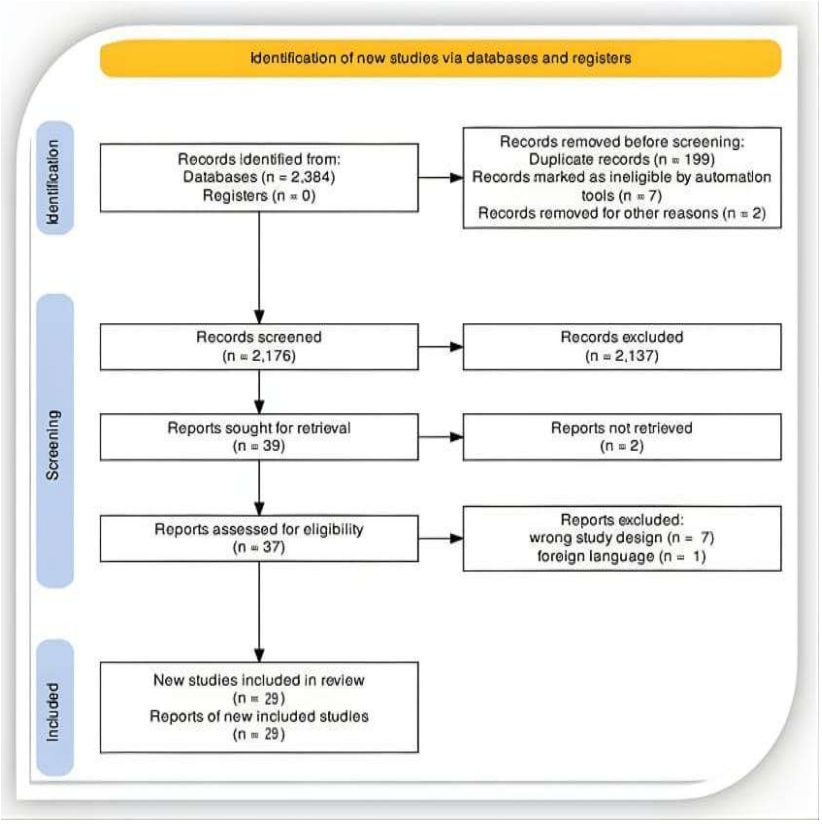

Figure 1. The PRISMA flow diagram outlines the selection process.

3.2. Study characteristics

The 29 included studies comprised 18 qualitative and 10 mixed-methods studies (qualitative components extracted). They represented diverse LMIC regions: sub-Saharan Africa (n = 14), South Asia (n = 6), the Middle East (n = 4), Southeast Asia (n = 3), and Latin America (n = 2). Sample sizes ranged from 11 to 444 participants. Key stakeholders included PHC workers, service users, caregivers, and policymakers. Study characteristics are summarised in **Table 1**.

Table 1. Characteristics of included studies.

Author(s), year	Country	Objective	Study design	Sampling method	Data collection method
Abayneh et al., 2017	Ethiopia	Explore service user involvement in mental health system strengthening	Qualitative	Purposive sampling	Semi-structured interviews, focus group discussions
Adewuya et al., 2025	Nigeria	Explore barriers and facilitators to sustaining mental health integration	Convergent mixed methods	Purposive sampling	In-depth interviews, institutional ethnography
Alfredsson et al., 2017	Cambodia	Assess attitudes toward mental health integration among health workers	Cross-sectional	Convenience sampling	Structured self-report questionnaire
Alhamidi & Alyousef, 2024	Saudi Arabia	Explore the value of PMHCNs in mental healthcare delivery	Phenomenology	Purposive sampling	Semi-structured interviews
Ayano, 2018	Ethiopia	Review evidence on mental health legislation in primary care	Qualitative	Purposive sampling	Literature review
Badu et al., 2018	Ghana	Identify barriers and enablers to mental health service access	Qualitative	Predefined criteria	Database search, data extraction
Benedict et al., 2025	Tanzania	Develop a regional mental health plan	Mixed methods	Purposive sampling	Interviews, focus group discussions
Kigozi & Ssebunnya, 2009	Uganda	Assess mental health service delivery challenges	Qualitative	Purposive sampling	Focus group discussions
Chu et al., 2022	Vietnam	Evaluate the HAPPINESS project's impact on stigma and knowledge	Convergent mixed methods	Purposive sampling	Questionnaires, interviews
Sakyi et al., 2024	Ghana	Explore the experiences of DMHP implementation in PHC	Qualitative	Purposive sampling	In-depth semi-structured interviews
Yaro et al., 2025	Ghana	Examine leadership and governance in mental health integration	Mixed methods	Purposive sampling	Questionnaires, interviews, FGDs
Hlongwa & Sibiya, 2019	South Africa	Analyse policy implementation for mental health integration	Grounded theory	Purposeful & theoretical sampling	Interviews, FGDs
Hopwood et al., 2023	Sierra Leone	Investigate barriers to mental health service provision	Descriptive qualitative	Purposeful sampling	Key informant interviews, FGDs
Petersen et al., 2016	South Africa	Explore mental health integration in primary care	Qualitative	Purposive sampling	Semi-structured interviews
Lasater et al., 2021	Mali	Identify an integrated care model for maternal mental health	Thematic analysis	Purposive sampling	Interviews, FGDs
Kigozi-Male et al., 2023	South Africa	Assess PHC nurses' knowledge and attitudes	Cross-sectional	Stratified random sampling	Self-administered questionnaire
Leung et al., 2020	Nepal	Examine barriers to mental health access	Qualitative	Purposive sampling	Semi-structured interviews
Luitel et al., 2020	Nepal	Assess perceptions of PHC-based mental health services	Qualitative	Purposive sampling	Semi-structured interviews
Martinez et al., 2017	Mexico	Identify barriers to behavioural health integration	Qualitative	Criterion sampling	Semi-structured interviews
Mayoyo et al., 2024	Democratic Republic of Congo (DRC)	Identify system barriers and facilitators	Cross-sectional	Multistage sampling	Interviews, population survey
Moloi et al., 2023	South Africa	Explore inter-professional collaboration	Qualitative	Purposive sampling	Focus group discussions
Murphy et al., 2018	Uganda	Examine the integration of depression services	Exploratory qualitative	Purposive sampling	Interviews, online survey
Nguyen et al., 2019	Northern Iraq	Understand stakeholder perspectives on integration	Convergent mixed methods	Convenience sampling	Questionnaires, interviews
Selak et al., 2025	Bosnia & Herzegovina	Explore DIALOG+ intervention experiences	Qualitative	Purposive sampling	Interviews, FGDs

Table 1. (*Continued*).

Author(s), year	Country	Objective	Study design	Sampling method	Data collection method
Slaven et al., 2021	Kenya	Explore integration barriers and facilitators	Qualitative	Purposive sampling	Semi-structured interviews
Hajebi et al., 2021	Iran	Assess the PHC mental health integration impact	Case study	Purposive sampling	Literature review, interviews
Wakida et al., 2019	Uganda	Explore system constraints to integration	Cross-sectional	Purposive sampling	Semi-structured interviews
Kauye et al., 2011	Malawi	Improve the capacity of health surveillance assistants	Mixed methods	Purposive sampling	Program evaluation, interviews
Wright et al., 2014	Malawi	Explore mental health integration in PHC	Qualitative	Purposive sampling	Semi-structured interviews

3.3. Overview of synthesised findings

The 29 included studies show that integration of mental health services (MHS) into primary health care (PHC) in LMICs is shaped by interacting factors across four socio-ecological levels: individual, interpersonal, organisational, and policy, rather than any single determinant (**Figure 2**). These factors operate as interconnected feedback loops that can reinforce barriers or strengthen facilitators. A key cross-level pathway is the policy-to-individual cascade: inadequate national funding leads to organisational constraints such as medication shortages and weak supervision, which reduce patient trust and delay help-seeking. Conversely, strong political commitment, community engagement, and workforce development create positive effects across levels.

At the individual level, low mental health literacy, stigma, cultural beliefs, and access barriers limit service use. Interpersonal factors include collaboration among health workers, traditional healers, and community leaders, as well as community engagement to build trust. Organisational challenges such as staff shortages, high turnover, weak supervision, and limited infrastructure and medicines are closely linked to leadership and resource availability. At the policy level, effective integration depends on clear policies, sustained government commitment, and adequate funding.

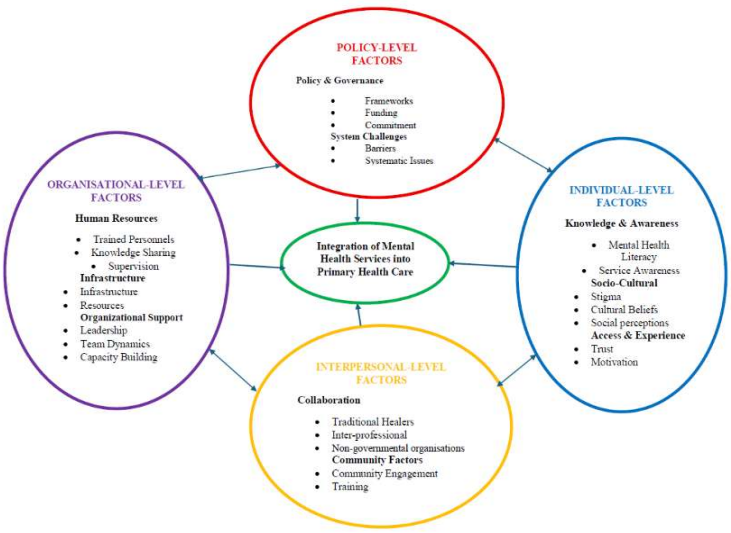

Figure 2. A framework summarising the factors influencing the integration of mental health.

These findings highlight that MHS integration requires coordinated, multi-level interventions that address the interdependence of factors across all levels, rather than isolated actions.

3.4. Individual-level factors

Across all levels, several interrelated barriers, particularly stigma, low mental health literacy, and sociocultural beliefs, recur and interact rather than operate independently [8,9,15–17]. To avoid repetition, these are synthesised here as interconnected drivers influencing service utilisation and engagement. At the individual level, stigma, low mental health literacy, and cultural beliefs jointly limit service utilisation [8,9,15–21]. These factors interact with structural barriers such as distance, cost, and limited-service awareness [7,9,15,16,19–22], while trust in provider competence emerges as a critical mediator of care-seeking behaviour [11,16,17,19–23]. Stigma is a pervasive multi-level barrier that discourages care-seeking, reinforces provider bias, and limits social support for recovery [8,9,15–21,24].

Cultural and religious beliefs, including preferences for traditional healing, further hinder integration and communication, while gender and family dynamics influence service use [7,9,15,16,15–21,24]. Community discrimination and structural barriers such as distance, transport challenges, and limited infrastructure restrict access, particularly for vulnerable groups [7,9,15–17,19–22]. Trust is critical, as low confidence in providers limits engagement, whereas positive experiences and culturally appropriate, participatory care improve adherence and sustained utilisation [11,12,16,17,19–23,25].

3.5. Interpersonal-level factors

Building on individual-level constraints, interpersonal factors primarily shape how trust, collaboration, and community engagement either reinforce or mitigate these barriers [17, 20,26–30]. Collaboration among health workers, traditional healers, and community actors enhances cultural acceptability and strengthens referral pathways [17–19,31,32]. Clear role definition, effective communication, and shared decision-making improve coordination, while external support from NGOs contributes when aligned with local systems [15,20,27–30,33].

Community engagement is essential for sustainable integration, as involvement in programme design, local partnerships, and stigma reduction improves trust, cultural relevance, and service use [17,20,26–30]. Provider support systems, including specialist consultation and referral networks, enhance confidence and care quality [7,25,34–48]. Training and capacity building are also critical, with ongoing mentorship strengthening clinical skills, competency, and service delivery [15,20,27–30,33,36].

3.6. Organisational-level factors

Many individual and interpersonal barriers are rooted in organisational constraints, particularly workforce limitations, supervision gaps, and resource shortages [4,8,9,15–17,20,21]. Workforce shortages, high staff turnover, and limited mental health training constrain service delivery, particularly in rural settings

[4,8,9,16,17,20,21,24,26]. These challenges are closely linked to inadequate supervision and weak support systems, which reduce provider confidence and care quality [8,16,20,27,33,37].

Inadequate infrastructure and resources, including poor facility conditions, limited equipment, unreliable medication supply, and funding gaps, further hinder service delivery and continuity of care [16,17,20,21,24,26]. However, digital systems and quality monitoring tools support coordination and programme improvement [20,28]. Organisational support also plays a critical role, as strong leadership, resource allocation, and positive team dynamics enhance provider performance and integration outcomes. Investments in training, leadership development, and infrastructure strengthen service quality and patient outcomes [8,25–27,32–34,38,44–50].

3.7. Policy-level factors

Organisational constraints are largely driven by upstream policy and governance conditions, particularly financing and system coordination [9,17,33–36,39–43]. Policy and governance shape integration through financing, regulation, and system coordination [9,17,32–35]. Inadequate funding and weak policy implementation limit workforce capacity, infrastructure, and service sustainability, reinforcing challenges observed at lower system levels [8,16–18,20,21,26,34,42].

However, systemic challenges persist, including funding shortages, staff constraints, and weak infrastructure, which limit service availability and continuity [8,16–18,20,21,26,34,36,42,51–53]. Fragmented health systems, unclear policy directives, and poor coordination across levels further hinder effective and consistent integration [9,17,25–27,33–36,39–43,49–51,54].

3.8. Cross-level interactions

Findings across all SEM levels revealed recursive feedback processes rather than isolated determinants. The most consistent cross-level pattern was a policy-to-individual cascade: inadequate national funding (reported in 8 studies) led to medication stockouts and weak supervision at the organisational level (7 and 5 studies, respectively), which in turn reduced patient trust and delayed help-seeking at the individual level (4 studies). Conversely, positive cascades were also documented: where political will was sustained, community engagement and workforce development produced improvements in service uptake across levels.

Stigma exemplified bidirectional interaction: community-level discrimination reduced care-seeking (individual level), while poor service quality at the organisational level reinforced negative community perceptions. Similarly, inadequate training at the organisational level worsened provider attitudes, compounding individual-level barriers. In settings where community engagement was actively cultivated through interpersonal channels—such as partnerships with traditional healers or community health workers—reductions in stigma were observed at both individual and community levels, demonstrating that positive cascades are equally systemic. A third cross-level pattern involved the reinforcing dynamic between workforce constraints and governance. Policy-level underfunding not only created medication shortages and infrastructure deficits at the organisational level, but also

weakened supervision and eroded staff confidence. This organisational deterioration in turn amplified individual-level outcomes: service users encountered less motivated providers, compounding distrust and disengagement. These cumulative, recursive dynamics confirm that integration challenges are systemic rather than additive, and that interventions must act across all socio-ecological levels simultaneously to achieve durable improvements in service access and quality.

4. Discussion

4.1. Main findings

This review synthesised 29 qualitative studies using the Socio-Ecological Model to generate a systems-level understanding of MHS integration into PHC in LMICs. Integration is shaped by interacting factors across individual, interpersonal, organisational, and policy levels. Policy-level constraints, particularly inadequate financing and weak governance, limit organisational resources, reduce provider performance, and erode patient trust, ultimately decreasing service utilisation. These recursive dynamics confirm that integration challenges are systemic: constraints at one level intensify weaknesses at others, making single-level interventions insufficient [7,39–43,45].

4.2. Comparison with prior reviews

Stigma, workforce shortages, and weak infrastructure are common barriers across LMICs, but this review shows their effects are shaped by cross-level interactions rather than acting in isolation [4,10,18,38]. For example, stigma is reinforced by poor service quality and inadequate provider training, creating feedback loops not captured in previous descriptive reviews.

These findings align with perspectives of health systems as complex adaptive systems, where interactions across system levels shape outcomes dynamically [19], where changes at one level influence outcomes at others. This highlights the need for coordinated system-wide approaches rather than linear interventions [10,35,44,46,50]. Contextual variation across regions further underscores this, as stigma, resource constraints, and system challenges differ by setting, requiring context-specific strategies instead of uniform policy responses [10,44,46,50].

4.3. Implications for LMIC policy and practice

Task-sharing, structured training, and supportive supervision improve service delivery when supported by strong health systems [10,32]. Community engagement and collaboration with traditional and religious actors enhance acceptability and access, especially in resource-limited settings [37,40,42,48]. However, these facilitators are only sustainable when backed by adequate financing and effective governance. A key gap is the limited inclusion of service-user perspectives, with most evidence reflecting provider and policy views [19,37,47]. These risks reinforce system-centred approaches. Incorporating lived experience through participatory mechanisms is essential to improve acceptability, service navigation, and continuity of care. These findings are directly relevant to Sustainable Development Goal (SDG)

3 on ensuring healthy lives and promoting well-being, particularly target 3.4 on mental health. Addressing inequities in access to integrated care also contributes to SDG 10 (reduced inequalities). Progress toward these goals requires coordinated, multi-level health system strengthening rather than isolated programme interventions.

4.4. Limitations and future research

The review has several limitations. Focusing on qualitative components of mixed-methods studies may have reduced interpretive depth, while exclusion of non-English studies introduces bias toward Anglophone LMIC contexts. The use of an inductive SEM framework, although data-driven, also carries the risk of subjectivity in classification. A notable geographic limitation is the underrepresentation of Latin America: only 2 of the 29 included studies were from this region. This limits confidence in whether the cascade model and related policy recommendations are transferable to Latin American LMIC contexts, where health system structures, colonial histories, and indigenous health practices differ markedly from the predominantly sub-Saharan African and South Asian evidence base. Future research should specifically prioritise qualitative and mixed-methods studies from Latin American LMICs examining cross-level integration dynamics, community and indigenous health actor roles, and policy implementation within diverse governance arrangements. Additionally, this review excluded purely quantitative studies to maintain methodological coherence in the qualitative synthesis; however, this means that evidence on the effectiveness and impact of specific integration strategies is not captured here. Readers are therefore strongly encouraged to consult the quantitative literature alongside this review to obtain a comprehensive picture of both the barriers and facilitators to, and the outcomes of, mental health integration into primary health care in LMICs. Future research should prioritise multi-level and participatory approaches involving service users and frontline providers. Digital health solutions may help address workforce gaps but require context-specific evaluation, while longitudinal studies are needed to assess sustainability. Expanding future reviews to include multilingual searches and grey literature would improve evidence representativeness.

5. Conclusion

This review demonstrates that mental health integration into primary health care in LMICs is driven by interconnected system dynamics across policy, organisational, interpersonal, and individual levels. The findings show that constraints in financing and governance propagate through health systems to influence workforce capacity, service quality, patient trust, and utilisation.

To achieve sustainable integration, policymakers should prioritise: (1) dedicated and long-term mental health financing; (2) task-sharing models supported by continuous training and supervision; (3) strengthening of organisational infrastructure and supply systems; (4) formal integration of community and traditional actors into care pathways; and (5) governance mechanisms that ensure coordination across health system levels. By advancing a systems-oriented understanding through the SEM, this study provides actionable guidance with relevance for LMIC contexts and global

mental health policy.

Author contributions: Conceptualisation, EON and ETD; methodology, EON, DB, ROA, PAB and ETD; software, EON; validation, EON, DB, ROA, PAB and ETD; formal analysis, EON; investigation, EON; resources, EON; data curation, EON; writing—original draft preparation, EON; writing—review and editing, EON, DB, ROA, PAB and ETD; visualisation, EON; supervision, ETD, DB, ROA, and PAB; project administration, EON; funding acquisition, EON. All authors have read and agreed to the published version of the manuscript.

Funding: None.

Ethical approval: Not applicable.

Informed consent statement: Not applicable.

Acknowledgements: The authors would like to acknowledge the generous contribution and expertise of all authors whose articles were used for the review.

Conflict of interest: The authors declare no conflict of interest.

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Appendix A: Search strategy for PubMed

Table A1. Search strategy for PubMed.

Search No.	Search terms	Results
#1	("Mental Health Services"[Mesh] OR "Mental Disorders"[Mesh] OR "Mental Health"[Mesh] OR "Community Mental Health Services"[Mesh])	1,234,567
#2	("Primary Health Care"[Mesh] OR "Physicians, Primary Care"[Mesh] OR "General Practice"[Mesh] OR "General Practitioners"[Mesh] OR "Primary Care Nursing"[Mesh] OR "Community Health Workers"[Mesh] OR "Nurses, Community Health"[Mesh])	892,345
#3	("Developing Countries"[Mesh] OR "Afghanistan"[Mesh] OR "Benin"[Mesh] OR "Burkina Faso"[Mesh] OR "Burundi"[Mesh] OR "Central African Republic"[Mesh] OR "Chad"[Mesh] OR "Comoros"[Mesh] OR "Democratic Republic of the Congo"[Mesh] OR "Eritrea"[Mesh] OR "Ethiopia"[Mesh] OR "Gambia"[Mesh] OR "Guinea-Bissau"[Mesh] OR "Guinea"[Mesh] OR "Haiti"[Mesh] OR "Democratic People's Republic of Korea"[Mesh] OR "Liberia"[Mesh] OR "Madagascar"[Mesh] OR "Malawi"[Mesh] OR "Mali"[Mesh] OR "Mozambique"[Mesh] OR "Nepal"[Mesh] OR "Niger"[Mesh] OR "Rwanda"[Mesh] OR "Senegal"[Mesh] OR "Sierra Leone"[Mesh] OR "Somalia"[Mesh] OR "South Sudan"[Mesh] OR "Syria"[Mesh] OR "Tajikistan"[Mesh] OR "Tanzania"[Mesh] OR "Togo"[Mesh] OR "Uganda"[Mesh] OR "Yemen"[Mesh] OR "Zimbabwe"[Mesh])	2,456,789
#4	("Delivery of Health Care, Integrated"[Mesh] OR "Health Services Accessibility"[Mesh] OR "Qualitative Research"[Mesh] OR "Health Knowledge, Attitudes, Practice"[Mesh] OR "Social Stigma"[Mesh] OR "Attitude of Health Personnel"[Mesh] OR "Cooperative Behavior"[Mesh] OR "Health Policy"[Mesh] OR "barriers"[All Fields] OR "facilitators"[All Fields] OR "challenges"[All Fields] OR "enablers"[All Fields] OR "integration"[All Fields])	3,123,456
#5	(#1 AND #2 AND #3 AND #4)	9876
#6	#5 AND (("2000/01/01"[PDAT] : "2025/12/31"[PDAT]) AND "humans"[MeSH Terms] AND "adult"[MeSH Terms] AND English[lang])	2456

Appendix B: Codebook excerpt linking codes to descriptive and analytical themes

Table B1. Codebook excerpt linking codes to descriptive and analytical themes.

Code	Code description	Sem level	Descriptive theme	Analytical theme
Insufficient provider competency	PHC staff lacked mental health diagnostic and treatment skills	Organisational	Limited clinical skills in mental health	Inadequate workforce capacity undermines integration
Spiritual explanatory models	Mental illness is attributed to spiritual causes	Community	Community beliefs shape help-seeking	Sociocultural factors impede early engagement
Medication stockouts	Inconsistent psychotropic supply in PHC	Policy/System	Resource and supply chain barriers	Weak system resourcing constrains service availability
Role ambiguity	Staff unclear on mental health responsibilities	Organisational	Unclear clinical roles for PHC providers	Fragmented governance limits integration
Stigma toward mental illness	Negative attitudes reduce care-seeking	Community	Stigma influences engagement	Sociocultural factors impede early engagement
Insufficient supervision	Minimal MHP oversight or mentorship	Interpersonal	Lack of supportive clinical supervision	Inadequate workforce capacity undermines integration

Appendix C: Confidence in findings

Table C1. ConQual summary of confidence in synthesised findings.

Synthesized finding	Type of research	Dependability	Credibility	ConQual score
1. Individual: Pervasive Stigma and Negative Socio-Cultural Perceptions. Fear of discrimination, provider bias, and community-level stigmatisation are pervasive barriers, compounded by cultural beliefs that conflict with biomedical approaches and social perceptions of mental illness as a weakness.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A
2. Individual: Knowledge and Awareness Gaps. Inadequate mental health literacy among providers and potential service users, including poor symptom recognition and limited awareness of available services or referral pathways, hinders engagement and integration.	Qualitative & Mixed-Methods	●●●○○	Unequivocal	B
3. Individual: Barriers to Access and Patient Engagement Geographic distance, financial costs, and inconvenient service hours limit accessibility. This is exacerbated by a lack of trust in provider competence and low motivation to seek care, which is influenced by previous negative service experiences.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A
4. Interpersonal: Critical Collaborations for Integration. Successful integration relies on effective inter-professional collaboration within PHC teams and strategic partnerships with external actors, including traditional healers, NGOs, and local health authorities, for legitimacy and support.	Qualitative & Mixed-Methods	●●●●●	Unequivocal	A
5. Interpersonal: Foundational Community Role. Active community engagement and advocacy are crucial for building trust, ensuring cultural appropriateness, reducing stigma, and promoting the utilisation of integrated mental health services.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A
6. Organisational: Severe Human Resource Constraints. A critical shortage of trained mental health personnel, high staff turnover, and a lack of ongoing supervision and support for primary care providers form a fundamental barrier to sustainable service delivery.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A
7. Organisational: Inadequate Infrastructure and Resources. Integration is hampered by insufficient physical space for confidential consultations, a lack of basic equipment, unreliable supply chains for psychotropic medications, and weak data tracking systems.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A
8. Organisational: Essential Organisational Support Systems. Strong leadership, positive team dynamics, and a supportive organisational culture that champions mental health integration are enablers for provider motivation and effective service delivery.	Qualitative & Mixed-Methods	●●●●○	Credible	B
9. Policy: Weak Governance and Funding Foundations. The absence of robust national mental health policies, legislative support, and sustainable government funding and political commitment undermines all other integration efforts.	Qualitative & Mixed-Methods	●●●○○	Credible	C
10. Policy: Pervasive Systemic and Implementation Challenges. Broader health system issues, including fragmented care, competing priorities within PHC, and inadequate resource constraints, create a difficult environment for implementing and scaling integrated mental health care.	Qualitative & Mixed-Methods	●●●●○	Unequivocal	A