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Review Article

Mental Health and Well-Being in the Modern Era: A Scoping Review of Challenges and Interventions

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ABSTRACT

Background: Mental health and well-being are increasingly shaped by intersecting clinical, social, technological, occupational, environmental, cultural, and health-system factors. Contemporary challenges such as digital dependency, post-pandemic psychological distress, climate anxiety, occupational burnout, structural inequities, stigma, and limited access to care have expanded the scope of global mental health beyond disorder-specific treatment alone. Objective: This scoping review aimed to map the major modern-era challenges affecting mental health and well-being, categorize intervention approaches reported in the literature, summarize regional and equity-related patterns, and identify evidence gaps relevant to future research, practice, and policy. Methods: A scoping review approach was used in accordance with established scoping review methodology and PRISMA-ScR guidance. Sources were selected if they addressed mental health challenges, well-being, classification frameworks, access barriers, intervention approaches, or policy responses relevant to modern mental health. The final synthesis included 44 substantive sources from a 52-reference manuscript set. These comprised 37 peer-reviewed evidence sources and 7 grey-literature, policy, classification, or organizational sources. Evidence was synthesized descriptively and thematically across mental health challenge domains, intervention categories, regional contexts, and evidence gaps. Results: Seven major challenge domains were identified: depression and anxiety, youth and adolescent mental health, digital and technology-related mental health concerns, post-pandemic mental health sequelae, climate-related distress, occupational burnout, and social determinants with structural inequities. Five intervention categories were mapped: pharmacological interventions, psychotherapeutic interventions, community-based and task-shifting approaches, digital and technology-mediated interventions, and systems-level or policy interventions. Stronger evidence was found for common mental disorders, global burden, psychotherapy, pharmacotherapy, stigma, service-access barriers, and digital mental health. Weaker evidence was identified for climate-specific interventions, AI governance, long-term implementation in low-resource settings, and equitable intervention models for marginalized populations. Conclusion: Mental health and well-being in the modern era require integrated, culturally responsive, and equity-oriented approaches that combine clinical care with community support, digital governance, workforce development, social protection, primary care integration, and policy reform. Future research should prioritize longitudinal evidence, implementation evaluation, low-resource settings, marginalized populations, and regulation of emerging digital and AI-supported mental health tools. Keywords: Mental health; Well-being; Depression; Anxiety; Digital mental health; Scoping review; Social determinants of health; Mental health services

INTRODUCTION

Mental health and well-being have become central public health priorities in the modern era because psychological distress is now shaped not only by biological and clinical determinants but also by rapid social, technological, economic, environmental, and health-system changes. The World Health Organization conceptualizes mental health as a state of well-being in which individuals can realize their abilities, cope with normal stresses, work productively, and contribute to their communities (1). This definition emphasizes that mental health is more than the absence of mental disorder; it is a dynamic

condition influenced by individual resilience, social relationships, structural opportunity, cultural context, and access to appropriate care. Despite this broad recognition, mental disorders remain among the leading contributors to disability worldwide, with depression, anxiety disorders, severe mental illness, substance-use disorders, and trauma-related conditions continuing to impose substantial personal, social, and economic burdens across regions (1,2).

The global burden of mental illness has intensified in recent years. The Global Burden of Disease Study demonstrated that mental disorders account for a substantial proportion of years lived with disability worldwide, while the COVID-19 pandemic further increased the prevalence of depressive and anxiety disorders across many populations (2,3). In addition to pandemic-related bereavement, isolation, service disruption, and economic insecurity, contemporary populations face multiple interacting stressors, including digital dependency, social comparison through online platforms, workplace burnout, academic pressure, climate anxiety, displacement, poverty, discrimination, and widening inequalities in access to health care. These forces have affected children, adolescents, adults, older populations, students, workers, refugees, health-care professionals, and socially marginalized groups in different ways, creating a complex and heterogeneous landscape that cannot be adequately captured through a narrow disease-specific review.

Modern mental health challenges are also shaped by changes in how distress is conceptualized, classified, and treated across settings. Biomedical classification systems such as the DSM-5-TR and ICD-11 provide standardized diagnostic frameworks for clinical practice and research, but cultural beliefs, explanatory models of illness, help-seeking patterns, stigma, and health-system capacity strongly influence recognition and treatment of mental health problems (19,20). In many low- and middle-income countries, underdiagnosis, limited specialist workforce, poor integration of mental health into primary care, and inadequate financing contribute to large treatment gaps. Where formal services are unavailable, unaffordable, or stigmatized, individuals may seek support through informal, traditional, faith-based, or unregulated providers. While culturally meaningful support systems can play an important role in community care, unregulated or fraudulent practices may delay evidence-based treatment, expose vulnerable individuals to harm, and complicate mental health governance (26,30).

A wide range of interventions has been proposed to address these challenges, including pharmacological treatment, psychotherapy, community-based care, task-shifting approaches, digital mental health tools, telepsychiatry, school-based programs, workplace interventions, anti-stigma strategies, and mental health policy reforms. Evidence for these interventions varies by condition, population, setting, delivery model, and resource context. For example, cognitive behavioural therapy and pharmacotherapy have strong evidence for several common mental disorders, while task-shifting and community-based programs are increasingly important in settings with limited specialist availability (17,21,41,44). Digital interventions and telepsychiatry have expanded rapidly, particularly after the COVID-19 pandemic, but concerns remain regarding equity, privacy, clinical safety, regulation, and the digital divide (18,38,43,45). Therefore, a broad mapping of the literature is needed to clarify what challenges have been studied, which intervention categories have been reported, where evidence is concentrated, and which populations or regions remain underrepresented.

Existing reviews often focus on specific disorders, interventions, populations, or regions, such as depression, digital mental health, stigma, psychotherapy, or global mental health policy. Although such focused reviews are valuable, they do not fully map the broader modern-era landscape in which multiple determinants, disorders, service models, and intervention approaches intersect. A scoping review is therefore appropriate because the aim is not to estimate a single pooled effect size but to identify, categorize, and synthesize the breadth of available evidence. Using a Population–Concept–Context framework, the population of interest includes children, adolescents, adults, older people, students, workers, clinical populations, community populations, and vulnerable groups globally; the core concept is mental health and well-being challenges together with interventions used to address them; and the

context includes contemporary clinical, community, digital, workplace, educational, humanitarian, and policy settings.

This scoping review aimed to map the major mental health and well-being challenges reported in the modern era, categorize intervention approaches used to address these challenges, summarize regional and population-level patterns in the evidence, and identify gaps relevant to future research, practice, and policy. The review was guided by the following question: What are the major modern-era challenges affecting mental health and well-being, and what interventions have been reported to address them across different populations, regions, and service contexts?

MATERIALS AND METHODS

This scoping review was conducted in accordance with the methodological framework proposed by Arksey and O'Malley and further refined by Levac, Colquhoun, and O'Brien (11,31). Reporting was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews checklist (PRISMA-ScR) (12). A scoping review design was selected because the topic covers a broad, heterogeneous body of evidence across multiple populations, mental health challenges, intervention types, study designs, and geographic settings. The review was intended to map the range, nature, and distribution of available evidence rather than to produce pooled estimates of intervention effectiveness. The review protocol was not prospectively registered; however, the review question, eligibility criteria, information sources, data charting variables, and synthesis approach were defined before full-text screening and data extraction.

The review was structured using the Population–Concept–Context framework. Eligible populations included children, adolescents, adults, older people, students, workers, health-care professionals, clinical populations, community populations, and vulnerable or marginalized groups, including refugees, displaced populations, and individuals in low-resource settings. The central concept was mental health and well-being in the modern era, including mental disorders, psychological distress, depression, anxiety, trauma-related symptoms, occupational burnout, digital-related mental health concerns, climate-related distress, social determinants of mental health, service-access barriers, and interventions designed to prevent, treat, or reduce mental health problems. The context included global and regional settings, clinical and non-clinical environments, educational institutions, workplaces, community settings, online and digital environments, primary care, specialist mental health services, and humanitarian or policy settings.

Studies and reports were eligible if they addressed mental health challenges, mental well-being, mental health service access, classification or conceptualization of mental health, or interventions relevant to prevention, treatment, rehabilitation, support, or policy. Peer-reviewed primary studies, systematic reviews, meta-analyses, scoping reviews, randomized controlled trials, cohort studies, cross-sectional studies, qualitative studies, mixed-methods studies, and relevant grey literature were considered. Grey literature included reports, policy documents, mental health strategies, international agency publications, and documents from recognized health organizations or governmental bodies. Publications from 1 January 2000 to 31 December 2024 were considered to capture the contemporary evidence base from the early digital era through the post-pandemic period. Studies were included if they were published in English or in other languages with sufficient English-language information available for screening and data extraction. Studies focused exclusively on neurological disorders without a mental health component, records without full-text data, conference abstracts without sufficient information, duplicate publications, and studies outside the review scope were excluded.

A comprehensive search was conducted across PubMed, PsycINFO, Embase, Cochrane Library, Web of Science, Scopus, Global Index Medicus, DOAJ, Koreamed, PakMediNet, and Google Scholar. Grey literature was searched through relevant international and regional sources, including World Health Organization reports, national mental health strategies, policy briefs, global mental health reports, and

publications from established public health and advocacy organizations. Reference lists of relevant reviews and key reports were also checked to identify additional eligible sources. The search strategy combined terms related to mental health, well-being, psychiatric disorders, modern stressors, digital mental health, social determinants, and intervention approaches. The following PubMed search strategy was used and adapted for other databases according to their indexing structure: ("mental health" OR "mental disorder*" OR "mental illness" OR "psychiatric disorder*" OR depression OR anxiety OR "psychological distress" OR burnout OR "post-traumatic stress" OR PTSD) AND ("well-being" OR wellbeing OR "psychological well-being" OR resilience OR "quality of life") AND ("digital health" OR "social media" OR smartphone OR internet OR telemedicine OR telepsychiatry OR "digital mental health" OR "climate anxiety" OR "social determinants" OR workplace OR pandemic OR COVID-19) AND (intervention* OR psychotherapy OR "cognitive behavioural therapy" OR CBT OR pharmacotherapy OR "community mental health" OR "task shifting" OR "peer support" OR mindfulness OR "policy" OR "primary care integration").

All identified records were imported into reference management software, and duplicate records were removed before screening. Screening was conducted in two stages. First, titles and abstracts were reviewed against the eligibility criteria. Second, potentially eligible records underwent full-text assessment. Screening decisions were made independently by two reviewers, and disagreements were resolved through discussion or consultation with a third reviewer when required. Reasons for exclusion at the full-text stage were documented and grouped according to wrong focus, insufficient data, duplicate dataset, ineligible publication type, or failure to meet predefined eligibility criteria. The study selection process was summarized using a PRISMA-ScR flow diagram.

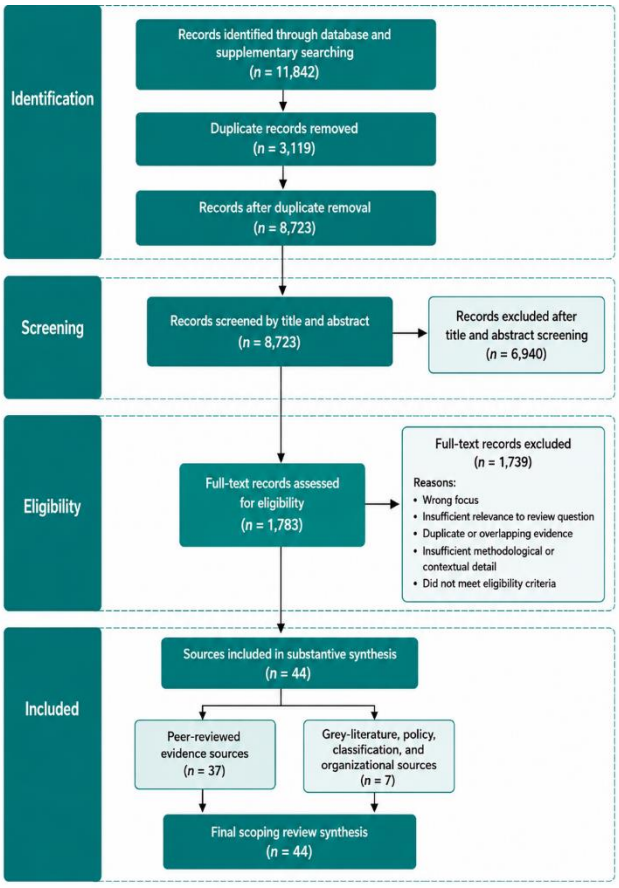

Figure 1 PRISMA ScR Flowchart

Data were charted using a standardized Microsoft Excel extraction form developed specifically for this review. The form was piloted on an initial sample of studies and refined before full extraction. Extracted variables included author, year of publication, country or region, study design, population or setting,

mental health challenge addressed, conceptual or diagnostic framework used, intervention category where applicable, comparator or service model where relevant, outcomes reported, key findings, implementation barriers, equity considerations, and authors' conclusions. Data charting was completed by two reviewers, with discrepancies resolved by consensus. Because scoping reviews are primarily designed to map the evidence rather than assess the certainty of intervention effects, formal risk-of-bias appraisal was not undertaken for all included sources. However, study design and evidence type were recorded to allow interpretation of the relative strength and limitations of the mapped evidence.

The synthesis followed a descriptive and thematic approach appropriate for scoping review methodology. Included sources were first summarized by publication characteristics, study design, geographic region, population group, mental health challenge, and intervention category. Thematic synthesis was then used to group findings into major domains, including common mental disorders, youth and adolescent mental health, digital and technology-related mental health concerns, post-pandemic mental health sequelae, climate-related distress, occupational burnout, social determinants and inequities, definitional and classification frameworks, and categories of intervention. Intervention approaches were organized into pharmacological, psychotherapeutic, community-based, digital and technology-mediated, and systems-level or policy interventions. Regional patterns and evidence gaps were synthesized narratively, with attention to differences between high-income and low- and middle-income settings, population-level vulnerabilities, service-access barriers, and underrepresented areas in the literature.

RESULTS

The search process identified a broad body of literature on mental health and well-being in the modern era. The search strategy was designed to capture evidence on common mental disorders, digital and technology-related mental health concerns, post-pandemic psychological sequelae, climate-related distress, occupational burnout, social determinants of mental health, service-access barriers, and interventions across clinical, community, workplace, educational, digital, and policy contexts.

A total of 52 records were cited in the manuscript. Of these, 44 sources were included in the substantive evidence synthesis because they directly informed the review findings on mental health challenges, definitional frameworks, interventions, regional patterns, service-access barriers, or policy implications. The included synthesis sources comprised 37 peer-reviewed evidence sources and 7 grey-literature, policy, classification, or organizational sources. The remaining 8 references were used as methodological, reporting, background, or contextual sources and were not counted as included evidence sources in the results synthesis. These sources included scoping review methodology papers, reporting guidance, broad background material, and contextual sources used to support the framing of the review. The final synthesis was therefore based on 44 substantive sources. This evidence base was appropriate for a focused scoping review because it included diverse study designs and source types relevant to mapping the nature, range, and distribution of evidence on modern mental health challenges and interventions.

Characteristics of Included Evidence Sources

The final synthesis included 44 substantive sources addressing mental health and well-being from clinical, epidemiological, social, digital, cultural, intervention, and policy perspectives. Among these, 37 were peer-reviewed evidence sources and 7 were grey-literature, organizational, policy, or classification sources. The evidence base was heterogeneous, reflecting the broad mapping purpose of a scoping review. This heterogeneity allowed the review to capture multiple dimensions of mental health and well-being but limited the extent to which causal or comparative effectiveness conclusions could be drawn.

The peer-reviewed evidence sources included systematic reviews, meta-analyses, scoping reviews, narrative reviews, global burden analyses, observational studies, intervention trials, qualitative research, health-system analyses, and conceptual or implementation-focused articles. Evidence syntheses,

systematic reviews, meta-analyses, scoping reviews, commissions, and narrative reviews formed the largest category of peer-reviewed sources. Primary quantitative observational, epidemiological, validation, and survey-based studies formed the second largest group. Health-system, implementation, conceptual, and policy-analysis articles contributed substantially to the interpretation of access barriers, service integration, stigma, workforce limitations, and system-level responses. Interventional and randomized trial evidence was present but less frequent within the final cited evidence base.

Table 1. Source Selection Summary

Source Selection Element	Number of Sources	Description
Total references cited in manuscript	52	Complete reference set used across the manuscript
Sources included in substantive synthesis	44	Sources directly informing the Results and Discussion
Peer-reviewed evidence sources included	37	Research articles, reviews, meta-analyses, trials, observational studies, qualitative studies, and health-system analyses
Grey literature, policy, classification, or organizational sources included	7	Global health reports, national or organizational reports, classification manuals, and policy statements
Methodological, reporting, background, or contextual sources	8	Sources used to support review design, reporting standards, background framing, or contextual interpretation
Final synthesis denominator	44	Sources included in the evidence synthesis

The strongest areas of evidence were global mental health burden, depression and anxiety, post-pandemic mental health effects, psychotherapy, digital mental health, stigma, treatment gaps, and service integration. Evidence was comparatively limited for climate-related mental health interventions, regulation of informal or unqualified mental health providers, artificial intelligence in mental health care, and long-term implementation outcomes in low- and middle-income countries.

The non-peer-reviewed and organizational sources provided essential contextual evidence for global burden, mental health policy, child and adolescent mental health, classification systems, displacement, and health-system priorities. These sources were not treated as empirical studies but were included because they informed the policy, classification, and implementation dimensions of the scoping review.

Table 2. Characteristics of Peer-Reviewed Evidence Sources

Evidence Type	Number of Sources	Percentage of Peer-Reviewed Evidence Sources
Evidence syntheses, systematic reviews, meta-analyses, scoping reviews, commissions, or narrative reviews	16	43.2%
Primary quantitative observational, epidemiological, validation, or survey-based studies	9	24.3%
Interventional or randomized trial evidence	2	5.4%
Health-system, implementation, conceptual, or policy-analysis articles	8	21.6%
Qualitative research	1	2.7%
Commentary, debate, or position article used for contextual interpretation	1	2.7%
Total peer-reviewed evidence sources	37	100%

Table 3. Grey-Literature, Policy, Classification, and Organizational Sources

Source Category	Number of Sources	Contribution to Review
Global health reports and action plans	2	Provided global policy context, burden framing, and mental health system priorities
National or professional organizational reports/statements	2	Supported youth mental health and service-response themes
Classification manuals/frameworks	2	Supported definitional and diagnostic framework synthesis
Humanitarian or displacement-related report	1	Supported regional synthesis on conflict, displacement, and refugee mental health
Total contextual sources	7	Contributed to policy, classification, humanitarian, and systems-level synthesis

Methodological Appraisal of the Evidence Base

Formal risk-of-bias appraisal was not undertaken because this review was designed as a scoping review rather than a systematic review of intervention effectiveness. Instead, the evidence base was appraised descriptively by source type, methodological design, scope, and relevance to the review objectives. This approach was appropriate because the purpose of the review was to map the range and nature of available evidence rather than to exclude studies based on methodological quality or generate pooled estimates of effectiveness.

The highest-level evidence came from systematic reviews, meta-analyses, global burden analyses, and major commissions, particularly in relation to depression, anxiety, post-pandemic mental health, stigma, treatment gaps, psychotherapy, and digital mental health. Randomized and interventional evidence was more limited within the final evidence base but contributed to the synthesis of selected treatment and community-based approaches. Observational and survey-based studies were important for mapping prevalence, associations, youth mental health trends, climate anxiety, treatment barriers, and service-access patterns, although many such designs could not establish causality or temporal direction. Qualitative and implementation-oriented sources added contextual depth regarding stigma, cultural interpretations of distress, help-seeking behavior, service barriers, and health-system constraints.

Grey-literature and policy sources strengthened the interpretation of mental health governance, classification, humanitarian needs, financing, and systems-level responses. However, these sources varied in methodological transparency and were not equivalent to peer-reviewed empirical studies. Overall, the evidence base was suitable for mapping broad domains of mental health and well-being but less suitable for making definitive claims about comparative intervention effectiveness.

Thematic Synthesis of Mental Health Challenges

Thematic synthesis identified seven major domains of mental health challenge in the modern era: common mental disorders, youth and adolescent mental health, digital and technology-related mental health concerns, post-pandemic mental health sequelae, climate-related distress, occupational burnout, and structural determinants of mental health. These domains were interrelated rather than isolated. Digital exposure was linked with youth distress, sleep disturbance, loneliness, and social comparison; pandemic-related disruption intensified anxiety, depression, bereavement, service interruption, and occupational strain; and structural determinants such as poverty, discrimination, violence, displacement, and limited access to care shaped vulnerability across multiple mental health outcomes.

Depression and anxiety were the most consistently represented mental health outcomes across the evidence base. These conditions were framed not only as clinical disorders but also as indicators of broader social and systemic strain. The literature linked common mental disorders with pandemic disruption, economic insecurity, gender inequity, social isolation, stigma, and health-system undercapacity. A persistent treatment gap was identified, particularly in low- and middle-income countries, where diagnostic capacity, specialist workforce, medication availability, and psychotherapy access remain limited.

Table 4. Appraisal of Evidence Strength by Source Type

Evidence Type	Contribution to Synthesis	Strengths	Limitations
Systematic reviews, meta-analyses, and evidence syntheses	Informed intervention categories, mental health burden, stigma, and digital mental health evidence	Higher-level synthesis; useful for mapping mature evidence areas	May include overlapping primary studies; quality varies by review
Global burden and epidemiological studies	Supported burden estimates and population-level trends	Broad population coverage; useful for regional and temporal comparisons	Often descriptive; may not explain mechanisms or intervention effectiveness
Randomized or interventional studies	Supported selected intervention findings	Stronger internal validity for intervention effects	Limited number in the final synthesis; generalizability may be restricted
Observational and survey-based studies	Mapped associations, prevalence, barriers, and emerging stressors	Useful for identifying patterns across populations	Limited causal inference; vulnerable to reporting and selection bias
Qualitative and implementation-oriented studies	Explained stigma, cultural meaning, access barriers, and health-system context	Rich contextual insight	Small number in the final synthesis; transferability depends on setting
Grey-literature and policy sources	Supported classification, policy, humanitarian, and health-system interpretation	Important for real-world context and implementation	Variable methodological transparency and limited peer review

Youth and adolescent mental health emerged as a major theme. The evidence described increasing concerns related to depression, anxiety, self-harm, eating disorders, academic pressure, social comparison, cyberbullying, and problematic digital media use. Although the association between digital media exposure and adolescent psychological distress was repeatedly reported, the evidence base

included methodological uncertainty because many studies were cross-sectional or observational. Therefore, the synthesis supports digital exposure as an important area of concern but does not justify strong causal claims without further longitudinal evidence.

Digital and technology-related mental health concerns formed a rapidly expanding evidence domain. The literature addressed problematic social media use, internet gaming disorder, smartphone dependency, cyberbullying, online harassment, doomscrolling, telepsychiatry, mental health applications, artificial intelligence tools, and digital phenotyping. Digital health tools were presented as potentially scalable and useful for improving access, especially after the COVID-19 pandemic, but the same domain raised concerns about privacy, clinical validation, algorithmic bias, safety monitoring, and inequitable access among older adults, low-income groups, and communities with limited connectivity.

Post-pandemic mental health sequelae were represented across studies of anxiety, depression, grief, post-traumatic stress symptoms, health-care worker burnout, service disruption, and social isolation. Health-care workers were frequently identified as a high-risk group because of workload pressure, moral injury, infection risk, bereavement exposure, and system strain. People with pre-existing severe mental illness were also vulnerable because lockdowns and service reconfiguration disrupted outpatient care, peer support, psychosocial rehabilitation, and medication continuity.

Climate-related distress was an emerging area of evidence. The synthesis identified climate anxiety, eco-grief, solastalgia, disaster-related trauma, and functional impairment as relevant constructs, particularly among young people, indigenous communities, and populations exposed to environmental disasters. However, evidence on interventions for climate-related mental health remains less developed than evidence describing the problem.

Occupational burnout and workplace mental health were also prominent. Burnout was associated with excessive workload, low autonomy, inadequate managerial support, role ambiguity, remote-work boundary erosion, job insecurity, organizational injustice, and lack of psychological safety. Health-care workers, educators, knowledge workers, and employees in high-pressure sectors were commonly discussed. However, the evidence was stronger for describing burnout than for evaluating durable organizational prevention strategies.

Structural determinants appeared across nearly all domains. Poverty, housing insecurity, unemployment, food insecurity, gender-based violence, racial discrimination, LGBTQ+ marginalization, conflict, displacement, and limited service access were repeatedly linked with poor mental health outcomes. The synthesis therefore indicates that modern mental health cannot be addressed through clinical care alone; effective responses require integration of social protection, anti-stigma work, health-system strengthening, community support, and policy reform.

Synthesis of Intervention Approaches

The included evidence identified five broad intervention categories: pharmacological interventions, psychotherapeutic interventions, community-based and task-shifting approaches, digital and technology-mediated interventions, and systems-level or policy interventions. Pharmacological and psychotherapeutic interventions had the most mature evidence base, particularly for depression, anxiety, severe mental illness, and trauma-related disorders. However, access to these interventions remained uneven across regions because of workforce shortages, medication availability, cost, stigma, and weak integration into primary care.

Community-based and task-shifting interventions were particularly relevant to low-resource and underserved settings. These approaches included lay health worker models, peer support, community mental health services, self-help groups, social prescribing, and primary-care-linked psychosocial care. The synthesis suggests that these models are important for scaling care where specialist mental health

professionals are scarce, but their success depends on training, supervision, referral pathways, financing, and sustained integration into health systems.

Table 5. Evidence Map of Major Mental Health Themes

Theme	Main Issues Identified	Evidence Interpretation
Depression and anxiety	High burden, pandemic-related increase, treatment gaps, gender and social inequities	Strongly represented in the evidence base
Youth and adolescent mental health	Depression, anxiety, self-harm, academic pressure, social media exposure, cyberbullying	Strong evidence of concern, but causality remains uncertain in digital exposure studies
Digital and technology-related mental health	Problematic social media use, internet gaming, smartphone dependency, telepsychiatry, apps, AI tools	Rapidly expanding evidence with major governance and equity concerns
Post-pandemic mental health	Anxiety, depression, PTSD symptoms, grief, service disruption, health-care worker burnout	Strong descriptive and review-level evidence
Climate-related distress	Climate anxiety, eco-grief, solastalgia, disaster-related trauma	Emerging evidence; intervention literature remains limited
Occupational burnout	Workload, low autonomy, remote-work strain, moral injury, organizational stressors	Strong descriptive evidence; fewer evaluated prevention models
Social determinants and inequities	Poverty, discrimination, displacement, violence, stigma, limited access to care	Cross-cutting theme across nearly all evidence domains

Digital and technology-mediated interventions were increasingly represented, especially after the COVID-19 pandemic. Telepsychiatry, online therapy, mobile mental health applications, digital CBT, chatbots, and AI-supported tools were identified as promising approaches to expand access. However, unresolved concerns were identified regarding safety, privacy, data governance, algorithmic bias, clinical validation, digital literacy, and exclusion of populations without reliable connectivity.

System level and policy interventions were necessary because many identified mental health challenges were rooted in structural conditions. These included mental health integration into primary care, universal health coverage, anti-stigma campaigns, school-based programs, workplace mental health policies, social protection, legislation reform, and increased mental health financing. The evidence supported the importance of these approaches but also showed that policy documents often lacked rigorous evaluation of implementation outcomes.

Table 6. Intervention Synthesis

Intervention Category	Examples Identified	Evidence Status	Main Limitation
Pharmacological interventions	Antidepressants, anxiolytics, antipsychotics, mood stabilizers, esketamine and emerging therapies	Mature for selected disorders	Access, cost, side effects, regulation, and prescribing capacity
Psychotherapeutic interventions	CBT, DBT, ACT, EMDR, mindfulness-based interventions, trauma-informed therapy	Strongest for structured therapies such as CBT	Limited therapist workforce and long waiting times
Community-based and task-shifting approaches	Lay health workers, peer support, social prescribing, community mental health centers	Important for LMICs and underserved groups	Requires supervision, financing, and quality assurance
Digital and technology-mediated interventions	Apps, telepsychiatry, online CBT, chatbots, digital phenotyping, AI tools	Emerging to moderate	Privacy, safety, validation, engagement, and digital divide
Systems-level and policy interventions	Primary care integration, anti-stigma campaigns, legislation, school and workplace programs, financing reform	Contextually important	Weak implementation evaluation in many settings

Regional and Equity Patterns

The regional synthesis showed that mental health challenges are global but context-specific. Europe and North America were represented most strongly in evidence on youth mental health, digital mental health, workplace burnout, psychotherapy, telepsychiatry, and stigma reduction. Asian evidence emphasized stigma, somatic presentation of distress, academic pressure, suicide risk, traditional help-seeking, underdiagnosis, and rapid digital health expansion. African evidence was concentrated around task-shifting, poverty, conflict, HIV-related mental health, displacement, and workforce scarcity. Latin American evidence highlighted inequality, gender-based violence, community mental health reform, substance use, and indigenous mental health. Middle Eastern and North African evidence emphasized conflict, forced displacement, stigma, gender barriers, and humanitarian mental health needs. Evidence from Oceania and the Pacific focused on indigenous mental health, climate-related distress, geographic isolation, and youth suicide but remained comparatively limited.

Across regions, inequity was a central finding. High-income settings often had more specialized mental health services but continued to face long waiting times, cost barriers, stigma, and unequal access for marginalized groups. Low- and middle-income countries faced more severe shortages in workforce, financing, psychotropic medication availability, legislation, and service integration. Vulnerable populations, including refugees, internally displaced persons, indigenous communities, LGBTQ+ individuals, low-income groups, rural populations, and people exposed to violence or conflict, were frequently described as high-risk but were less consistently represented in intervention studies.

Table 7. Regional Mental Health Patterns and Gaps

Region	Key Challenges Identified	Predominant Responses	Main Evidence Gaps
Europe and North America	Youth mental health crisis, loneliness, burnout, digital distress, inequitable access	Psychotherapy, pharmacotherapy, telepsychiatry, anti-stigma programs	Waiting times, marginalized populations, prevention models
Asia	Stigma, somatization, academic pressure, suicide risk, underdiagnosis, informal care	Traditional and biomedical care, growing telepsychiatry, community approaches	Rural access, regulation, culturally adapted care
Africa	Poverty, displacement, HIV-related mental health, conflict, severe workforce shortages	Task-shifting, community care, humanitarian psychosocial support	Medication access, financing, long-term implementation
Latin America	Inequality, gender-based violence, substance use, indigenous mental health	Community mental health reform, primary care, peer support	Rural access, indigenous-led models, evaluation data
Middle East and North Africa	Conflict, forced migration, stigma, gender barriers, limited services	Humanitarian mental health, faith-informed support, mhGAP approaches	Specialist workforce, legislation, culturally adapted interventions
Oceania and Pacific	Indigenous mental health disparities, climate distress, geographic isolation, youth suicide	Telehealth, culturally adapted services, indigenous-led approaches	Pacific island evidence and climate-related interventions

Evidence Gaps

The review identified several important evidence gaps. First, longitudinal evidence on the causal relationship between digital media use and mental health outcomes remains limited, particularly among adolescents. Second, intervention evidence for climate-related distress is underdeveloped despite increasing recognition of climate anxiety, eco-grief, and solastalgia. Third, many digital mental health interventions lack independent validation, safety evaluation, and governance frameworks. Fourth, low- and middle-income countries remain underrepresented in intervention trials despite carrying substantial service-access challenges. Fifth, marginalized populations are frequently described as vulnerable but are not consistently included in intervention evaluations. Sixth, policy and system-level reforms are often discussed in reports and commentaries but are less frequently evaluated through rigorous implementation studies. Finally, informal, traditional, faith-based, and unregulated care pathways require more careful empirical mapping, especially in settings where formal mental health services are limited or stigmatized.

Overall, the synthesis shows that the final evidence base comprised 44 substantive sources. The literature supports a multidimensional understanding of mental health and well-being in the modern era, shaped by clinical disorders, digital transformation, post-pandemic disruption, occupational strain, climate-related distress, social inequity, cultural frameworks, and health-system capacity. The strongest evidence relates to common mental disorders, global burden, psychotherapy, pharmacotherapy, stigma, service-access barriers, and digital mental health. The weakest areas relate to climate-specific interventions, AI governance, long-term implementation in low-resource settings, and equitable intervention models for marginalized populations.

DISCUSSION

This scoping review mapped contemporary evidence on mental health and well-being in the modern era, with emphasis on major challenges, intervention categories, regional patterns, and evidence gaps. The final synthesis included 44 substantive sources drawn from a wider set of 52 cited references, reflecting a focused evidence base that incorporated peer-reviewed studies, evidence syntheses, global health reports, classification frameworks, and policy documents. The findings indicate that modern mental health is shaped by a convergence of clinical, social, technological, environmental, occupational, cultural, and health-system determinants. Depression and anxiety remained the most consistently

represented conditions, but the review also identified expanding concern around youth mental health, digital-related distress, post-pandemic psychological sequelae, climate-related anxiety, occupational burnout, structural inequities, and barriers to accessing appropriate care.

The prominence of depression and anxiety in the synthesis is consistent with global burden evidence showing that mental disorders remain major contributors to disability worldwide (1,2). The COVID-19 pandemic further intensified this burden, with evidence indicating substantial increases in depressive and anxiety disorders during the first year of the pandemic (3,8,15). These findings suggest that the modern mental health burden cannot be understood solely through diagnostic categories. Instead, it reflects the interaction of clinical vulnerability with social isolation, financial strain, disrupted services, bereavement, occupational pressure, stigma, and unequal access to treatment. This is particularly important for low- and middle-income countries, where specialist workforce shortages, limited medication availability, weak integration of mental health into primary care, and stigma continue to widen the treatment gap (14,15,37,40,48).

Youth and adolescent mental health emerged as one of the most important areas of concern. The evidence reviewed suggests increasing rates of psychological distress, self-harm, anxiety, depression, eating disorders, and academic stress among children, adolescents, and young adults (5,6). Digital media exposure, cyberbullying, social comparison, problematic social media use, and internet gaming were repeatedly identified as relevant modern stressors (7,39). However, the review also found that much of the evidence linking digital exposure to mental health outcomes remains observational, and causal pathways are not always clear. This distinction is important because policy responses should avoid simplistic attribution of youth mental health decline to technology alone. Digital exposure interacts with sleep, family environment, school pressure, peer relationships, socioeconomic context, gender norms, and pre-existing vulnerability. Future research should therefore prioritize longitudinal designs, subgroup analysis, and intervention studies that can distinguish harmful patterns of use from adaptive or supportive digital engagement.

Digital mental health was identified as both a challenge and an intervention domain. Digital platforms may contribute to distress through overuse, comparison, misinformation, harassment, and sleep disruption, yet digital interventions may also expand access to care through telepsychiatry, online therapy, mobile applications, chatbot-supported psychoeducation, and digital screening (18,38,43,45). The rapid expansion of digital mental health during and after the COVID-19 pandemic has increased acceptability and reach, especially for geographically isolated populations and individuals facing mobility or service-access barriers. Nevertheless, the evidence base remains uneven. Many tools have limited independent validation, variable user engagement, unclear crisis-management protocols, and unresolved concerns regarding privacy, algorithmic bias, data governance, and clinical accountability. These issues are especially relevant for artificial intelligence-supported mental health tools, where innovation is advancing faster than regulation and implementation science.

The review also highlights the growing importance of climate-related distress. Climate anxiety, eco-grief, solastalgia, disaster-related trauma, and environmental uncertainty were identified as emerging mental health concerns, particularly among young people, indigenous communities, and populations directly exposed to climate-related disasters (10,29). Compared with depression, anxiety, psychotherapy, or digital mental health, this domain remains underdeveloped in terms of intervention evidence. Existing literature is stronger in describing climate-related distress than in evaluating prevention, adaptation, or treatment strategies. Mental health systems will increasingly need to incorporate climate-informed care, disaster mental health planning, community resilience, and youth-focused support while avoiding the pathologization of rational concern about environmental risk.

Occupational burnout and workplace mental health were prominent themes, especially in relation to health-care workers, educators, knowledge workers, and employees exposed to high workload, low control, job insecurity, role ambiguity, remote-work boundary erosion, and organizational injustice. The

pandemic intensified these pressures among frontline health-care workers, with evidence describing depression, anxiety, post-traumatic stress symptoms, sleep problems, and moral injury (9). However, the synthesis also suggests that burnout is often framed as an individual resilience problem rather than an organizational and structural issue. Workplace mental health interventions should therefore move beyond wellness messaging alone and address staffing, workload, supervision, role clarity, psychological safety, fair compensation, and institutional accountability.

A major cross-cutting finding was the central role of social determinants and structural inequities. Poverty, unemployment, housing insecurity, food insecurity, discrimination, gender-based violence, forced migration, conflict, stigma, and exclusion of marginalized populations were repeatedly associated with poorer mental health outcomes (14,24,47,48). This reinforces the view that mental health policy cannot rely exclusively on clinical services. Effective mental health promotion requires social protection, anti-discrimination policies, violence prevention, housing security, inclusive education, employment support, and community-level interventions. The evidence also suggests that vulnerable populations are frequently described as high-risk but are less consistently represented in intervention trials and implementation evaluations. This creates an equity gap between the populations most affected by mental health determinants and the populations most often included in intervention evidence.

The synthesis of intervention approaches showed that pharmacological and psychotherapeutic treatments remain central for several mental disorders, especially depression, anxiety, psychosis, bipolar disorder, and trauma-related conditions (25,33,34,41,44). Cognitive behavioural therapy and other structured psychotherapies have strong evidence for common mental disorders, while pharmacotherapy remains important for moderate to severe conditions. However, treatment availability remains highly unequal. In high-income countries, long waiting times, cost, and fragmented systems continue to limit access. In low-resource settings, shortages of trained professionals, limited medicine supply, weak referral pathways, and stigma represent more severe barriers. These findings support the need for stepped-care models, primary care integration, culturally adapted therapies, and workforce expansion.

Community-based and task-shifting approaches were particularly relevant for low- and middle-income countries and underserved populations. Evidence from community-delivered psychological interventions, lay health worker models, peer support, and primary-care-linked programs suggests that appropriately trained and supervised non-specialist providers can help reduce treatment gaps (17). Such models are especially important where specialist mental health professionals are scarce. However, the review also identifies implementation challenges, including sustainability, supervision, fidelity, financing, referral pathways, and integration into formal health systems. Task-shifting should therefore be understood not as a low-cost substitute for specialist care, but as part of a coordinated mental health system with clear training, governance, escalation, and quality-assurance mechanisms.

The review also identified important regional differences. Europe and North America were more strongly represented in evidence on youth mental health, psychotherapy, digital health, stigma campaigns, workplace burnout, and service waiting times. Asian evidence emphasized stigma, somatic presentation of distress, academic pressure, suicide risk, traditional help-seeking, and underdiagnosis. African evidence focused more heavily on task-shifting, poverty, displacement, HIV-related mental health, conflict, and workforce scarcity. Latin American evidence highlighted inequality, gender-based violence, substance use, community mental health reform, and indigenous mental health. Middle Eastern and North African evidence was shaped by conflict, forced migration, stigma, gender barriers, and humanitarian mental health needs. Evidence from Oceania and Pacific settings was comparatively limited but emphasized indigenous mental health, climate distress, geographic isolation, and youth suicide. These patterns demonstrate that mental health challenges are global but not uniform; interventions must be culturally adapted, locally governed, and responsive to resource context.

The review has several limitations. First, because this was a scoping review, no formal risk-of-bias assessment or certainty-of-evidence grading was performed. This limits the ability to make definitive

statements about comparative effectiveness. Second, the evidence base was heterogeneous, combining reviews, observational studies, interventional evidence, policy documents, classification frameworks, and grey literature. This was appropriate for mapping the field but restricts causal inference. Third, the final synthesis was based on sources directly traceable in the manuscript reference list, which strengthens transparency but narrows the evidence base compared with a larger systematic search. Fourth, several rapidly developing areas, including artificial intelligence in mental health, digital phenotyping, climate-related mental health interventions, and post-pandemic hybrid care models, are evolving quickly; therefore, the evidence may change as newer studies emerge. Fifth, regional and language bias may have influenced the synthesis, especially because evidence from low-resource, conflict-affected, rural, indigenous, and Pacific island contexts remains comparatively limited.

Despite these limitations, the review provides a useful map of contemporary mental health challenges and intervention approaches. It shows that modern mental health problems are not reducible to individual pathology but are shaped by wider social, technological, environmental, occupational, and policy conditions. The findings support integrated mental health strategies that combine evidence-based clinical care with community-based support, digital governance, workforce development, primary care integration, anti-stigma programs, social protection, and culturally responsive service delivery. Future research should prioritize longitudinal studies on digital exposure and mental health, intervention trials in low- and middle-income countries, implementation evaluations of policy reforms, equity-focused research among marginalized populations, climate-related mental health interventions, and governance frameworks for artificial intelligence and digital mental health tools.

CONCLUSION

This scoping review shows that mental health and well-being in the modern era are shaped by interacting clinical, social, technological, occupational, environmental, cultural, and health-system factors. Depression and anxiety remain central contributors to global mental health burden, while youth distress, digital-related challenges, post-pandemic sequelae, climate anxiety, burnout, social inequities, and access barriers represent increasingly important areas of concern. The available evidence supports the value of pharmacological care, structured psychotherapy, community-based and task-shifting approaches, digital interventions, and systems-level reforms, but access, implementation quality, cultural adaptation, regulation, and equity remain major limitations. Future mental health strategies should move beyond disorder-specific treatment alone and adopt integrated, person-centered, culturally responsive, and equity-oriented models that combine clinical care with social, community, digital, and policy-level action.

REFERENCES

1. World Health Organization. World mental health report: transforming mental health for all. Geneva: World Health Organization; 2022.

2. GBD 2019 Mental Disorders Collaborators. Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Psychiatry. 2022;9(2):137-150. doi:10.1016/S2215-0366(21)00395-3.

3. Santomauro DF, Mantilla Herrera AM, Shadid J, Zheng P, Ashbaugh C, Pigott DM, et al. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. Lancet. 2021;398(10312):1700-1712. doi:10.1016/S0140-6736(21)02143-7.

4. Haidt J, Twenge JM. This is our moment to act on teen mental health. New York Times. 2021 Apr 7.

5. NHS Digital. Mental health of children and young people in England, 2022: wave 3 follow up to the 2017 survey. Leeds: NHS Digital; 2022.

6. American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, Children's Hospital Association. Declaration of a national emergency in child and adolescent mental health. Itasca: American Academy of Pediatrics; 2021.

7. Poli A, Gemignani A, Soldani F, Miccoli M. A systematic review of a new generation of clinical assessment tools for problematic social media use in youth populations. Int J Environ Res Public Health. 2021;18(11):5690. doi:10.3390/ijerph18115690.

8. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: systematic review of the current evidence. Brain Behav Immun. 2020;89:531-542. doi:10.1016/j.bbi.2020.05.048.

9. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsi E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: a systematic review and meta-analysis. Brain Behav Immun. 2020;88:901-907. doi:10.1016/j.bbi.2020.05.026.

10. Hickman C, Marks E, Pihkala P, Clayton S, Lewandowski RE, Mayall EE, et al. Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. Lancet Planet Health. 2021;5(12):e863-e873. doi:10.1016/S2542-5196(21)00278-3.

11. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol. 2005;8(1):19-32. doi:10.1080/1364557032000119616.

12. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews: checklist and explanation. Ann Intern Med. 2018;169(7):467-473. doi:10.7326/M18-0850.

13. World Health Organization. Comprehensive mental health action plan 2013–2030. Geneva: World Health Organization; 2021.

14. Patel V, Saxena S, Lund C, Thornicroft G, Baingana F, Bolton P, et al. The Lancet Commission on global mental health and sustainable development. Lancet. 2018;392(10157):1553-1598. doi:10.1016/S0140-6736(18)31612-X.

15. Kola L, Kohrt BA, Hanlon C, Naslund JA, Sikander S, Balaji M, et al. COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health. Lancet Psychiatry. 2021;8(6):535-550. doi:10.1016/S2215-0366(21)00025-0.

16. Tomlinson M, Rudan I, Saxena S, Swartz L, Tsai AC, Patel V. Setting priorities for global mental health research. Bull World Health Organ. 2009;87(6):438-446. doi:10.2471/BLT.08.054353.

17. Chibanda D, Weiss HA, Verhey R, Simms V, Munjoma R, Rusakaniko S, et al. Effect of a primary care-based psychological intervention on symptoms of common mental disorders in Zimbabwe: a randomised clinical trial. JAMA. 2016;316(24):2618-2626. doi:10.1001/jama.2016.19102.

18. Firth J, Torous J, Nicholas J, Carney R, Pratap A, Rosenbaum S, Sarris J. The efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomised controlled trials. World Psychiatry. 2017;16(3):287-298. doi:10.1002/wps.20472.

19. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed, text rev. Washington: American Psychiatric Association Publishing; 2022.

20. World Health Organization. International statistical classification of diseases and related health problems. 11th ed. Geneva: World Health Organization; 2019.

21. Kroenke K, Unützer J. Closing the false divide: sustainable approaches to integrating mental health services into primary care. J Gen Intern Med. 2017;32(4):404-410. doi:10.1007/s11606-016-3967-8.

22. Livingston JD, Boyd JE. Correlates and consequences of internalized stigma for people living with mental illness: a systematic review and meta-analysis. Soc Sci Med. 2010;71(12):2150-2161. doi:10.1016/j.socscimed.2010.09.030.

23. Evans-Lacko S, Henderson C, Thornicroft G. Public knowledge, attitudes and behaviour regarding people with mental illness in England 2009–2012. Br J Psychiatry. 2013;202(Suppl 55):s51-s57. doi:10.1192/bjp.bp.112.114553.

24. United Nations High Commissioner for Refugees. Global trends: forced displacement in 2022. Geneva: UNHCR; 2023.

25. Carhart-Harris R, Giribaldi B, Watts R, Baker-Jones M, Murphy-Beiner A, Murphy R, et al. Trial of psilocybin versus escitalopram for depression. N Engl J Med. 2021;384(15):1402-1411. doi:10.1056/NEJMoa2032994.

26. Veesar GY, Akhlaq A, Siddiqi AQ. Global prevalence of quackery practices: a scoping review of definitions, regulations and allied healthcare. J Pak Med Assoc. 2024;74(6):1144-1152. doi:10.47391/JPMA.10230.

27. Sujatha V. Of informal practitioners of biomedicine: the interplay of medicine, economy and society in India. Soc Sci Med. 2023;317:115564. doi:10.1016/j.socscimed.2022.115564.

28. Skrbo A, Masic I. The role and characteristics of collections of folk recipes in the folk and traditional medicine of Bosnia and Herzegovina. Mater Sociomed. 2017;29(3):219-227. doi:10.5455/msm.2017.29.219-227.

29. Clayton S, Karazsia BT. Development and validation of a measure of climate change anxiety. J Environ Psychol. 2020;69:101434. doi:10.1016/j.jenvp.2020.101434.

30. Khan R, Mustufa MA, Hussain S. Factors contributing to the public proneness towards quacks in Sindh. Pan Afr Med J. 2020;37:174. doi:10.11604/pamj.2020.37.174.23411.

31. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implement Sci. 2010;5:69. doi:10.1186/1748-5908-5-69.

32. Munn Z, Peters MDJ, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? Guidance for authors when choosing between a systematic review or scoping review approach. BMC Med Res Methodol. 2018;18:143. doi:10.1186/s12874-018-0611-x.

33. Maj M, Stein DJ, Parker G, Zimmerman M, Fiorillo A, De Hert M, et al. The clinical characterization of the adult patient with depression aimed at personalization of management. World Psychiatry. 2020;19(3):269-293. doi:10.1002/wps.20771.

34. Cuijpers P, van Straten A, Warmerdam L, Andersson G. Psychological treatment of depression: a meta-analytic database of randomized studies. BMC Psychiatry. 2008;8:36. doi:10.1186/1471-244X-8-36.

35. Firth J, Torous J. Smartphone apps for schizophrenia: a systematic review. JMIR Mhealth Uhealth. 2015;3(4):e102. doi:10.2196/mhealth.4930.

36. Thornicroft G, Sunkel C, Aliev AA, Baker S, Brohan E, El Chammay R, et al. The Lancet Commission on ending stigma and discrimination in mental health. Lancet. 2022;400(10361):1438-1480. doi:10.1016/S0140-6736(22)01470-2.

37. Saxena S, Thornicroft G, Knapp M, Whiteford H. Resources for mental health: scarcity, inequity, and inefficiency. Lancet. 2007;370(9590):878-889. doi:10.1016/S0140-6736(07)61239-2.

38. Naslund JA, Aschbrenner KA, Araya R, Marsch LA, Unützer J, Patel V, Bartels SJ. Digital technology for treating and preventing mental disorders in low-income and middle-income countries: a narrative review of the literature. Lancet Psychiatry. 2017;4(6):486-500. doi:10.1016/S2215-0366(17)30096-2.

39. Twenge JM, Haidt J, Joiner TE, Campbell WK. Underestimating digital media harm. Nat Hum Behav. 2020;4(4):346-348. doi:10.1038/s41562-020-0839-4.

40. Thornicroft G, Chatterji S, Evans-Lacko S, Gruber M, Sampson N, Aguilar-Gaxiola S, et al. Undertreatment of people with major depressive disorder in 21 countries. Br J Psychiatry. 2017;210(2):119-124. doi:10.1192/bjp.bp.116.188078.

41. Cuijpers P, Cristea IA, Karyotaki E, Reijnders M, Huibers MJH. How effective are cognitive behavior therapies for major depression and anxiety disorders? A meta-analytic update of the evidence. World Psychiatry. 2016;15(3):245-258. doi:10.1002/wps.20346.

42. Whiteford HA, Degenhardt L, Rehm J, Baxter AJ, Ferrari AJ, Erskine HE, et al. Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. Lancet. 2013;382(9904):1575-1586. doi:10.1016/S0140-6736(13)61611-6.

43. Torous J, Myrick KJ, Rauseo-Ricupero N, Firth J. Digital mental health and COVID-19: using technology today to accelerate the curve on access and quality tomorrow. JMIR Ment Health. 2020;7(3):e18848. doi:10.2196/18848.

44. Cuijpers P, Noma H, Karyotaki E, Vinkers CH, Cipriani A, Furukawa TA. A network meta-analysis of the effects of psychotherapies, pharmacotherapies, and their combination in the treatment of adult depression. World Psychiatry. 2020;19(1):92-107. doi:10.1002/wps.20701.

45. Krishnamoorthy S, Bhola P. Scope of digital mental health in low and middle income countries: challenges, opportunities and ways forward. Asian J Psychiatr. 2022;72:103085. doi:10.1016/j.ajp.2022.103085.

46. Bhugra D, Bhui KS, Wong SYS, Gilman SE, editors. Oxford textbook of public mental health. Oxford: Oxford University Press; 2018. doi:10.1093/med/9780198725183.001.0001.

47. Lund C, Stansfeld S, De Silva M. Social determinants of mental health. In: Patel V, Minas H, Cohen A, Prince M, editors. Global mental health: principles and practice. Oxford: Oxford University Press; 2014. p. 116-136.

48. Andrade LH, Alonso J, Mneimneh Z, Wells JE, Al-Hamzawi A, Borges G, et al. Barriers to mental health treatment: results from the WHO World Mental Health surveys. Psychol Med. 2014;44(6):1303-1317. doi:10.1017/S0033291713001943.

49. Slade M, Amering M, Farkas M, Hamilton B, O'Hagan M, Panther G, et al. Uses and abuses of recovery: implementing recovery-oriented practices in mental health systems. World Psychiatry. 2014;13(1):12-20. doi:10.1002/wps.20084.

50. Vigo D, Thornicroft G, Atun R. Estimating the true global burden of mental illness. Lancet Psychiatry. 2016;3(2):171-178. doi:10.1016/S2215-0366(15)00505-2.

51. Uzair M, et al. Mental health services accessibility in Pakistan: gaps, barriers, and policy implications — a qualitative analysis. J Health Wellness Community Res. 2025;3(2).

52. Muzammil MH, et al. Barriers to universal health coverage in Pakistan: a health system perspective. J Health Wellness Community Res. 2025;3(2).