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## Review Article



# The impact of policy shifts on mental health innovation, accessibility, and ethical considerations

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## ABSTRACT

Mental health policies have historically prioritised treatment over prevention, focusing on symptom management and crisis intervention. Growing recognition of the economic and social burden of untreated psychiatric conditions has prompted a global shift towards prevention-oriented frameworks, accelerating innovation in early detection, digital health, and community-based care. This narrative review examines how the shift from treatment-focused to prevention-oriented mental health policies shapes mental health innovation, with particular attention to early detection technologies, digital interventions, policy-driven funding reallocation, and associated ethical and accessibility challenges. A narrative review of peer-reviewed literature and policy reports published between 2015 and 2025 was conducted using PubMed, PsycINFO, Scopus, Web of Science, and Google Scholar, supplemented by reports from the World Health Organization, National Institute of Mental Health, and other health organisations. Findings were synthesised thematically across 4 key areas: advances in early detection and screening tools; digital mental health solutions; policy-driven funding reallocation; and ethical and accessibility challenges. Prevention-oriented policies have accelerated innovations including artificial intelligence (AI)-driven screening tools, polygenic risk scoring, teletherapy platforms, mobile applications, and virtual reality interventions. Policy-driven funding reallocation has expanded school-based, workplace, and primary care mental health programmes. However, significant disparities in access persist, particularly in low- and middle-income countries (LMICs). Ethical concerns regarding algorithmic bias, data privacy, and stigmatisation associated with predictive risk tools remain insufficiently addressed. A critical policy tension exists between rising prevention investment and the risk of neglecting treatment services for individuals with severe mental illness (SMI). While prevention-oriented mental health policies offer substantial promise, their equitable and ethical implementation requires robust regulatory frameworks for AI, balanced resource allocation between prevention and SMI treatment, and context-sensitive strategies that explicitly address LMIC needs and safeguard ongoing care for individuals with chronic psychiatric conditions.

**Keywords:** Mental health; Health policy; Preventive psychiatry; Telemedicine; Ethics

**Conflict of Interest**

The authors declare that they have no competing interests.

**Author Contributions**

Conceptualization: Ebo TO, Osho D, Ebo DM, Egbon E, Olawade DB, Okesanya OJ; Data curation: Osho D, Egbon E; Funding acquisition: Ebo TO; Investigation: Ebo TO, Egbon E; Methodology: Ebo TO, Osho D, Ebo DM, Egbon E, Olawade DB, Okesanya OJ; Resources: Ebo TO; Software: Ebo DM; Validation: Osho D, Olawade DB; Visualization: Olawade DB; Writing - original draft: Ebo TO, Osho D, Ebo DM, Egbon E, Olawade DB, Okesanya OJ; Writing - review & editing: Ebo TO, Osho D, Ebo DM, Egbon E, Olawade DB, Okesanya OJ.

**INTRODUCTION**

Historically, mental health policies have prioritized treatment over prevention, focusing primarily on symptom management, crisis intervention, and rehabilitation.<sup>1</sup> Traditional psychiatric care has often been reactive rather than proactive, with the dominant model emphasizing hospital-based care, pharmacological treatments, and psychotherapy for individuals already diagnosed with mental disorders.<sup>2</sup> While these interventions remain essential, they do not address the underlying factors contributing to the development of mental illness, nor do they prevent the onset of psychiatric conditions in at-risk populations. A growing body of research and policy discourse has therefore shifted attention toward preventive approaches, recognizing that early intervention and broader systemic strategies can mitigate the burden of mental disorders before they escalate into severe, chronic conditions.<sup>3</sup>

The increasing emphasis on prevention in mental health policy is driven by several converging forces, including a deeper understanding of the social determinants of health, the rising economic costs associated with untreated psychiatric conditions, and advancements in neuroscience and technology that enable earlier detection of mental health risks.<sup>4</sup> Factors such as poverty, childhood trauma, housing instability, and limited access to education play a critical role in mental well-being, making it clear that effective prevention strategies must extend beyond clinical settings to integrate public health, education, and social welfare initiatives.<sup>3</sup> This shift resonates with global health priorities, where the emphasis has increasingly moved from treatment-centric models towards holistic, community-based approaches that foster resilience and address structural risk factors at the population level.<sup>5</sup> Notably, low- and middle-income countries (LMICs) face unique challenges in this transition, including constrained health system resources, workforce shortages, and limited digital infrastructure, underscoring the importance of context-sensitive policy design.<sup>6</sup>

Scientific and technological advances have further fueled this transition by enabling more precise identification of individuals at risk for mental health disorders.<sup>7</sup> Breakthroughs in genetic research, neuroimaging, and artificial intelligence (AI)-based predictive analytics have opened new possibilities for early intervention.<sup>8</sup> Machine learning algorithms can now analyze speech patterns, social media activity, and wearable sensor data to detect subtle behavioural changes associated with depression or psychosis before symptoms become clinically significant.<sup>9</sup> Similarly, research on polygenic risk scores is enhancing the identification of individuals predisposed to conditions such as schizophrenia or bipolar disorder.<sup>10</sup> In parallel, digital mental health solutions, including teletherapy, mobile applications, and AI-driven chatbots—have expanded access to preventive resources, particularly in underserved and remote communities.<sup>11</sup> These developments raise important questions about effectiveness, accessibility, data governance, and the ethical implications of predictive models in clinical practice.<sup>12</sup>

While the shift toward prevention presents promising opportunities for mental health innovation, it also introduces significant challenges. One major concern is the risk of diverting resources away from individuals with severe mental illnesses (SMI) who require intensive and ongoing care.<sup>13</sup> Additionally, increasing reliance on predictive analytics and AI-driven screening tools raises ethical concerns related to stigma, discrimination, and privacy.<sup>14</sup> Critically, there remains a gap in the literature examining how prevention-oriented policy frameworks interact with innovation trajectories across different health system contexts, particularly in LMICs where the evidence base is comparatively limited.<sup>13</sup>

This narrative review therefore critically analyses how the shift from treatment-focused to prevention-oriented mental health policies shapes innovation in mental health care. Specifically, the review seeks to: explore advances in predictive screening tools such as AI-driven diagnostics and genetic risk assessments; evaluate the role of digital health solutions, including teletherapy and mobile applications, in preventive mental health care; assess how policy-driven funding shifts influence the balance between prevention initiatives and treatment programmes; and identify key ethical and accessibility challenges associated with prioritizing prevention over traditional psychiatric care. By synthesizing existing literature and policy developments, this review aims to provide insights into how prevention-based policies can drive mental health innovation while ensuring equitable, ethical, and effective implementation.

## METHODS

This narrative review synthesises existing literature, policy reports, and empirical studies to examine the impact of shifting mental health policies from treatment to prevention on mental health innovation (Table 1). Unlike systematic reviews, which follow a strict protocol for literature selection and statistical analysis, a narrative review provides a broader, integrative perspective, allowing for a critical discussion of emerging trends, challenges, and implications. This review was not conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, as these are not applicable to narrative reviews; the methodological implications of this decision are discussed in the Section ‘Limitations of the Review.’

A comprehensive search was conducted across major academic databases, including PubMed, PsycINFO, Scopus, Web of Science, and Google Scholar, focusing on literature published between 2015 and 2024. The search strategy incorporated a combination of keywords such as “mental health prevention strategies,” “early intervention in psychiatry,” “digital mental health solutions,” and “policy-driven funding reallocation in mental health

**Table 1.** Summary of methodology for the narrative review

Method aspect	Description
Study design	Narrative review analyzing existing literature, policy reports, and empirical studies on the shift from treatment to prevention in mental health. Not conducted according to PRISMA guidelines; no formal screening phases, data extraction template, or quantitative synthesis were employed.
Databases searched	PubMed, PsycINFO, Scopus, Web of Science, Google Scholar.
Search timeframe	2015–2025 (with foundational studies before 2010 if relevant).
Search keywords	Mental health prevention strategies, early intervention in psychiatry, digital mental health solutions, predictive analytics in mental health, funding reallocation in mental health care, ethical considerations in preventive psychiatry.
Additional resources	Reports from the WHO, NIMH, government agencies, and mental health advocacy organizations.
Inclusion criteria	Peer-reviewed journal articles, systematic reviews, meta-analyses, and policy reports. Studies published in English. Literature focuses on early detection, digital mental health interventions, funding changes, and ethical considerations. Research covering both high-income country and LMICs.
Exclusion criteria	Articles focusing solely on treatment without discussing prevention or innovation. Studies published before 2010 (unless foundational). Non-English publications. Opinion pieces, blogs, and sources lack empirical evidence.
Data extraction and analysis	Thematic analysis focuses on 4 key areas: (1) advances in early detection and screening tools; (2) digital mental health solutions; (3) policy-driven funding reallocation; (4) ethical and accessibility challenges. No structured data extraction tool was used; thematic synthesis was conducted narratively.
Limitations	Potential selection bias due to narrative review format. Exclusion of non-English studies may limit perspectives from some regions. Rapidly evolving policies and innovations may not be fully captured. PRISMA guidelines not followed; no formal screening phase documentation; no quantitative evidence synthesis; limited LMIC representation.

PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses; WHO = World Health Organization; NIMH = National Institute of Mental Health; LMIC = low- and middle-income country.

care.” Additionally, reports from global health organisations, such as the World Health Organization, the National Institute of Mental Health, and other governmental and non-governmental agencies, were reviewed to incorporate real-world policy changes and their implications.

To ensure relevance and quality, the review included peer-reviewed journal articles, systematic reviews, meta-analyses, and policy reports that focused on prevention-based mental health policies and their impact on innovation. Studies were selected if they discussed advancements in early detection tools, digital mental health interventions, funding reallocation, or ethical considerations associated with the prevention paradigm. Literature focusing solely on treatment models without addressing prevention or innovation was excluded. Articles published before 2015 were only considered if they provided foundational insights relevant to current policy trends. Due to feasibility constraints, non-English publications were excluded, which may have limited perspectives from non-English-speaking regions. The selected studies were analysed thematically, categorising findings into 4 key areas: (1) advances in early detection and screening tools, (2) digital mental health solutions, (3) policy-driven funding reallocation, and (4) ethical and accessibility challenges. These themes are addressed in Sections ‘Innovations in Mental Health Care Driven by Prevention-Oriented Policies’ and ‘Ethical and Accessibility Challenges in Prevention-Oriented Mental Health Policies’ of this review. Section ‘The Shift from Treatment to Prevention in Mental Health Policy: Contextual Background’ provides essential contextual background on the economic and social rationale underpinning the policy shift from treatment to prevention; it is not intended as a thematic analytical section but rather as a framing context for the themes that follow.

Findings were synthesised to identify common themes, research gaps, and potential implications for future policy and innovation. The review critically assessed the effectiveness, feasibility, and ethical concerns of prevention-focused mental health policies, highlighting both their benefits and unintended consequences.

## **THE SHIFT FROM TREATMENT TO PREVENTION IN MENTAL HEALTH POLICY: CONTEXTUAL BACKGROUND**

This section provides contextual background on the economic, social, and structural drivers underpinning the policy shift from treatment to prevention in mental health. It is intended to situate the analytical themes, early detection, digital innovation, funding reallocation, and ethical challenges, that are examined in Sections ‘Innovations in Mental Health Care Driven by Prevention-Oriented Policies’ through ‘Future Directions and Policy Recommendations.’ Understanding why this policy shift is occurring is essential to evaluating its implications for innovation and equity across health system contexts.

The shift from treatment to prevention in mental health policy marks a fundamental change in how psychiatric care is approached, moving away from reactive crisis management toward proactive strategies that address risk factors before disorders fully manifest.<sup>15</sup>

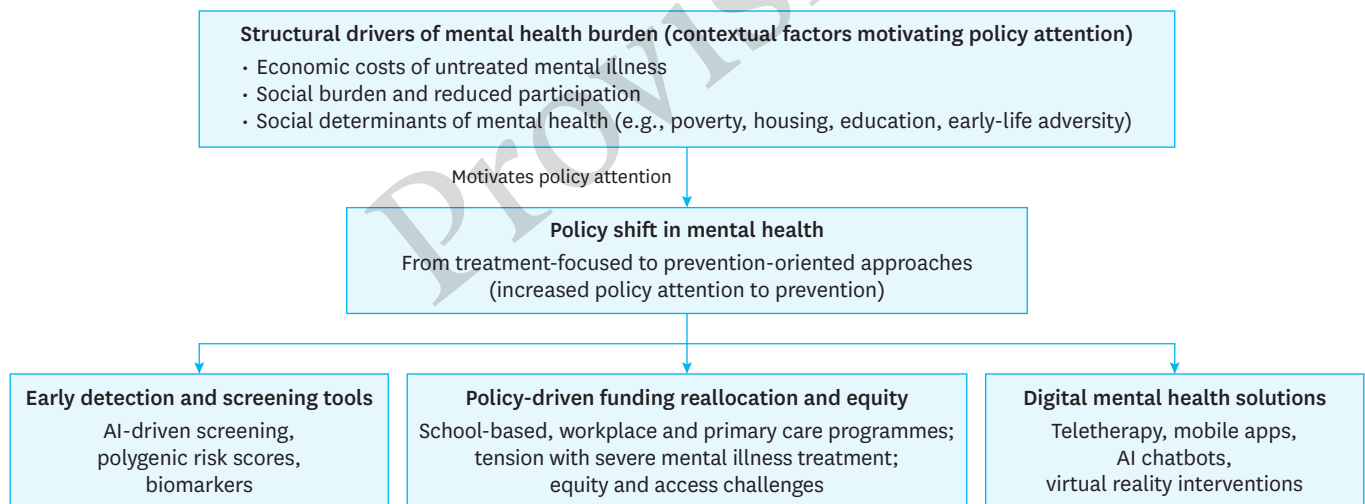
### **The economic and social rationale for prevention**

The economic and social burdens of untreated mental health conditions are substantial, prompting governments and healthcare organizations to prioritize preventive strategies.<sup>15</sup>

Globally, mental disorders cost an estimated \$1 trillion annually in lost productivity, absenteeism, and healthcare expenditures.<sup>16</sup> In the United States (US) alone, untreated mental illness results in approximately \$282 billion in annual economic losses, comparable to the impact of a recession.<sup>17</sup> In the United Kingdom (UK), a recent study projected that the ongoing mental health crisis among children and young people could lead to a £1.1 trillion loss in lifetime earnings, underscoring the long-term economic consequences of inadequate mental health support.<sup>18</sup>

Investing in prevention offers a cost-effective solution to mitigate these challenges. Evidence indicates that mental health promotion and prevention interventions are not only effective but also economically advantageous.<sup>19</sup> A systematic review found that most studies consistently reported such interventions as cost-effective or cost-saving, with targeted prevention approaches being particularly beneficial.<sup>20</sup> Early intervention programmes can reduce the need for more intensive treatments and decrease the likelihood of long-term disability, leading to significant cost savings for healthcare systems.<sup>21</sup> Additionally, workplace mental health initiatives have been shown to enhance employee well-being and productivity, further contributing to economic gains.<sup>22</sup>

Beyond financial considerations, preventive mental health strategies yield substantial social benefits.<sup>23</sup> Early intervention and public education programmes can improve quality of life, reduce stigma, and promote social cohesion.<sup>24</sup> By addressing mental health issues proactively, individuals are better equipped to engage in educational and employment opportunities, fostering a more productive and inclusive society.<sup>25</sup> Moreover, prevention efforts can alleviate pressures on healthcare systems, allowing resources to be allocated more efficiently and effectively.<sup>26</sup> **Fig. 1** summarizes the structural drivers that underpin the policy shift from treatment to prevention and indicates how this shift leads to the innovations and equity challenges examined in later sections.



**Fig. 1.** Conceptual background to prevention-oriented mental health policy. The figure depicts how structural drivers of mental health burden (economic costs of untreated mental illness, social burden and reduced participation, and social determinants such as poverty, housing, education, and early-life adversity) operate as contextual factors that motivate increased policy attention to prevention, rather than as direct policy mechanisms. This shift in policy orientation from treatment-focused to prevention-oriented approaches, in turn, shapes 3 downstream domains examined in the review: advances in early detection and screening tools, digital mental health solutions, and policy-driven funding reallocation with associated equity challenges.  
AI = artificial intelligence.

### The role of social determinants of health

A growing body of research highlights the profound impact of social determinants, such as poverty, education, housing, and early-life experiences, on mental health outcomes.<sup>27</sup> Individuals exposed to adverse social conditions are more vulnerable to mental health disorders throughout their lives, often due to structural factors that perpetuate cycles of disadvantage and poor health.<sup>3</sup> In response, policymakers are increasingly integrating mental health prevention into broader public health and social welfare programmes.<sup>28</sup> For instance, the Substance Abuse and Mental Health Services Administration has identified promoting resilience and emotional health as a priority, emphasizing the need for early-life interventions and community-based support systems.<sup>29,30</sup>

The relevance of social determinants is particularly pronounced in global and LMIC contexts, where structural inequities in income, housing, and access to education disproportionately affect mental health.<sup>31</sup> Prevention strategies that fail to engage with these upstream determinants risk reproducing existing inequities rather than reducing them. Addressing these structural drivers through comprehensive policies and programmes therefore holds potential to significantly improve mental health outcomes and reduce disparities across populations.<sup>3</sup>

## INNOVATIONS IN MENTAL HEALTH CARE DRIVEN BY PREVENTION-ORIENTED POLICIES

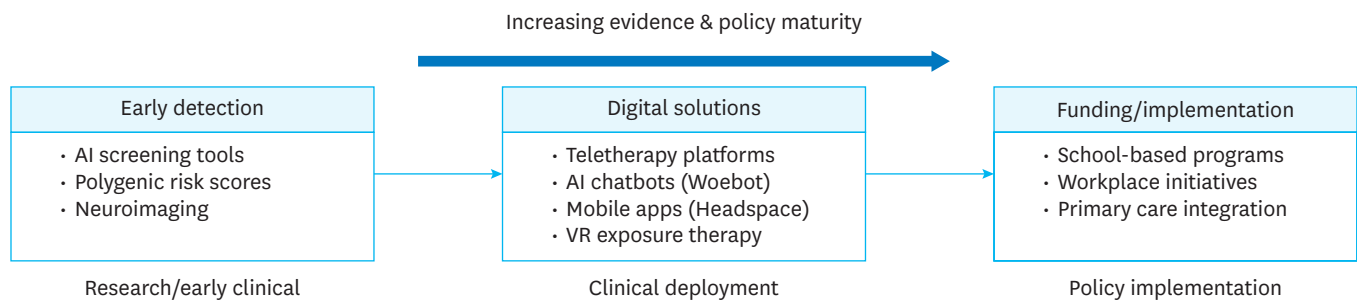
The shift toward prevention-focused mental health policies has accelerated innovation in early detection, digital interventions, and integrated care models.<sup>32</sup> Advances in predictive analytics, AI, and biomarker research now enable early identification of at-risk individuals, allowing for timely intervention before disorders fully develop.<sup>33</sup> Digital mental health solutions, including teletherapy, mobile applications, and AI-driven chatbots, have expanded access to preventive care, particularly for underserved populations.<sup>34</sup> Additionally, policy-driven funding reallocation has prioritized community-based programmes, workplace mental health initiatives, and school-based interventions, fostering a more proactive approach to mental well-being.<sup>35</sup> While these innovations hold considerable promise, their benefits have been demonstrated primarily in high-income country contexts. The applicability of findings to LMICs, where resource constraints, digital infrastructure gaps, and differing burden-of-disease profiles create distinct implementation challenges, must be interpreted with caution and is further discussed in Section 'Ethical and Accessibility Challenges in Prevention-Oriented Mental Health Policies.'

**Fig. 2** illustrates the maturity spectrum across prevention-oriented innovations, with early detection technologies at the research stage, digital solutions in mixed deployment, and funding/implementation strategies demonstrating strongest policy readiness.

### Advances in early detection and screening tools

Prevention-focused mental health policies have significantly advanced early detection and screening methodologies, emphasizing the identification of at-risk individuals before clinical symptoms emerge.<sup>36</sup> Key innovations include the development of genetic and neurobiological markers and the application of AI in screening tools.

- Genetic and neurobiological markers: Research into polygenic risk scores has shown promise in identifying individuals with a heightened genetic predisposition to mental



**Fig. 2.** Maturity spectrum of prevention-oriented mental health innovations. This diagram illustrates the comparative development stages across 3 core innovation domains driven by prevention policies. Early detection technologies (left) remain predominantly research-stage with limited clinical validation. Digital solutions (center) demonstrate mixed clinical deployment with moderate randomized controlled trial evidence, particularly for teletherapy. Policy-driven implementation strategies (right) show strongest evidence and highest policy readiness. The left-to-right progression highlights critical differences in evidence maturity and scalability that inform policy prioritization.

health disorders such as schizophrenia, bipolar disorder, and major depression.<sup>37</sup> By analyzing the cumulative effect of multiple genetic variants, these scores can estimate an individual's susceptibility to these conditions.<sup>38</sup> Additionally, neuroimaging studies have identified structural and functional brain abnormalities associated with these disorders, providing potential biomarkers for early detection.<sup>39,40</sup> Specific patterns in brain connectivity and activity have been linked to an increased risk of developing schizophrenia, enabling earlier and more targeted interventions.<sup>41</sup>

- AI-powered screening tools: The integration of AI into mental health screening has led to the development of machine learning algorithms capable of analyzing diverse data sources to detect early signs of mental health decline.<sup>42</sup> AI models have been trained to assess speech patterns, social media activity, and data from wearable sensors to identify indicators of mental health crises.<sup>43</sup> A study demonstrated that an AI tool effectively detected distress in hospital workers' conversations with their therapists, suggesting potential applications for early screening of depression and anxiety.<sup>44</sup> Furthermore, AI-driven analysis of social media posts has been explored to identify early signs of mental health crises, with models achieving high accuracy.<sup>45</sup>

Taken together, these advances represent a significant conceptual shift in how risk identification is conceptualized, from clinical presentation to pre-symptomatic detection. However, comparing across these technologies reveals important differences in maturity and evidence base. Polygenic risk scores, while theoretically promising, remain primarily research tools with limited clinical validation outside controlled settings.<sup>46</sup> AI-based tools vary substantially in their training datasets, transparency, and generalizability, with few validated studies conducted in LMIC populations.<sup>47</sup> This heterogeneity in evidence quality means policymakers must exercise caution when translating these innovations into routine screening programmes, particularly before robust governance frameworks are established.

### Digital mental health solutions

Prevention-oriented mental health policies have catalyzed the development and adoption of digital health technologies, offering scalable and accessible interventions to broader populations. Notable trends include the emergence of teletherapy platforms, AI-powered chatbots, mobile applications for self-monitoring and resilience training, and virtual reality (VR) interventions.

- Teletherapy and AI chatbots: Digital platforms have expanded access to mental health services, particularly for individuals facing barriers to traditional therapy.<sup>48</sup> AI-powered chatbots, such as Woebot and Wysa, provide immediate support through evidence-based techniques like cognitive-behavioural therapy (CBT), offering tools to manage mental health challenges around the clock.<sup>49</sup> These chatbots are designed to supplement, rather than replace, conventional therapy.
- Mobile apps for self-monitoring and resilience training: A range of mobile applications has been developed to promote mental wellness through mindfulness, CBT, and behavioural tracking.<sup>50</sup> For instance, Headspace offers guided meditation aimed at reducing stress and improving focus, while Moodfit provides mood tracking and CBT-based exercises to enhance emotional well-being.<sup>51</sup> These apps empower users to actively engage in their mental health care, fostering resilience and self-awareness.
- VR interventions: VR technology has been increasingly utilised in mental health interventions, particularly for exposure therapy and social skills training.<sup>52</sup> VR-based exposure therapy immerses individuals in controlled environments to confront and manage fears, showing promise in preventing and treating conditions including post-traumatic stress disorder (PTSD) and social anxiety.<sup>53</sup> A meta-analysis suggested that VR exposure therapy is effective for PTSD and depression symptoms, with benefits maintained for up to 6 months.<sup>54</sup>

Critically, the evidence base for these digital solutions is not uniform. Teletherapy and mindfulness applications have comparatively stronger evidence from randomized controlled trials, particularly in high-income settings.<sup>55</sup> By contrast, AI chatbot interventions remain at earlier stages of clinical validation, with most studies limited by small sample sizes and short follow-up periods.<sup>56</sup> VR interventions, while promising, carry significant cost and infrastructure barriers that currently restrict their applicability in LMICs and resource-constrained settings.<sup>57</sup> This differential evidence maturity should inform how policymakers prioritize and regulate digital mental health adoption under prevention frameworks.

### Policy-driven funding reallocation

The shift toward prevention in mental health policy has led to a significant reallocation of funding, emphasizing community-based and public health initiatives.<sup>57</sup> This strategic redirection aims to address mental health issues proactively, reducing the incidence and severity of disorders through early intervention and support.

- Increased investment in school-based mental health programmes: Governments have augmented funding for mental health services within educational settings, recognizing the critical role of early-life experiences in mental health.<sup>58</sup> These programmes focus on early identification of mental health issues, counselling services, and promoting well-being among students.<sup>59</sup> Doran and Kinchin<sup>60</sup> showed that mental illness leads to early school leaving, lower employment rates, reduced income, and massive long-term economic costs to society, projecting trillions in future burden. It demonstrates how unaddressed mental health problems directly harm both individual life outcomes and national economies.
- Expansion of workplace mental health policies: Employers are increasingly implementing mental health initiatives to support employee well-being, recognizing that a healthy workforce enhances productivity and reduces absenteeism.<sup>61</sup> Policies such as mental health days, employee assistance programmes, and wellness activities are becoming more prevalent.<sup>62</sup>

- Integration of mental health services in primary care settings: Integrating mental health services into primary care is a key strategy to improve accessibility and reduce stigma.<sup>63</sup> By providing mental health support within general healthcare settings, individuals are more likely to seek help early, leading to better outcomes.<sup>64</sup>

While these initiatives enhance accessibility and aim to reduce the long-term burden of mental health disorders, concerns have been raised about potential reductions in funding for SMI treatment programmes. Critics argue that the focus on prevention and early intervention may divert resources from individuals requiring intensive, specialized care. For example, recent changes in the UK's National Health Service (NHS) have been criticized for deprioritizing mental health and dementia care by reducing specific performance targets, potentially leading to neglect in these areas.<sup>65</sup> This tension between prevention investment and sustained treatment funding represents one of the most critical policy design challenges in this field and is addressed further in Section 'Future Directions and Policy Recommendations.'

## **ETHICAL AND ACCESSIBILITY CHALLENGES IN PREVENTION-ORIENTED MENTAL HEALTH POLICIES**

While prevention-oriented mental health policies offer significant benefits, they also present complex challenges and ethical dilemmas.<sup>14</sup> Issues such as disparities in access to preventive care, privacy concerns in AI-driven risk assessments, and the potential stigmatization of individuals identified as "high-risk" require careful consideration.<sup>66</sup> Additionally, there is growing concern that shifting resources toward prevention may inadvertently reduce funding for critical services needed by individuals with SMI.<sup>13</sup> Ethical debates also arise regarding the balance between early intervention and personal autonomy, as well as the risks of overdiagnosis.<sup>14</sup> These challenges are particularly acute in global contexts, where prevention-oriented innovations developed in high-income countries are applied, often without adaptation, to settings with substantially different health system capacities, cultural frameworks, and social determinants of risk.

### **Disparities in access to preventive care**

Despite the promise of prevention-oriented mental health policies, significant disparities in access to preventive care persist, influenced by socioeconomic factors, digital literacy gaps, and regional differences.<sup>67</sup> Individuals from lower socioeconomic backgrounds often face barriers such as lack of insurance coverage, high out-of-pocket costs, and limited availability of mental health professionals in their communities, hindering their ability to engage in early intervention programmes.<sup>68</sup> Studies highlight that even among insured patients, issues such as inadequate coverage and high costs impede access to mental health services.<sup>69</sup>

Digital literacy gaps further exacerbate these disparities, as many preventive interventions increasingly rely on technology-based solutions.<sup>70</sup> Individuals lacking access to digital devices or the skills to use them are less likely to benefit from teletherapy, mental health apps, or online support groups.<sup>71</sup> This digital divide disproportionately affects older adults, rural populations, and certain minority groups, limiting the reach of innovative preventive measures.<sup>72</sup> Regional differences also play a critical role, with rural areas often experiencing shortages of mental health professionals and services.<sup>73</sup> According to the Association of American Medical Colleges, more than half of US counties, many of which are rural, have no practicing psychiatrists, making access to preventive care challenging for residents in these regions.<sup>73</sup>

The access challenge is most pronounced in LMICs, where mental health workforce shortages, limited health financing, and poor digital infrastructure create substantial barriers to the implementation of prevention-oriented innovations.<sup>13</sup> Task-shifting approaches, delegating mental health care functions to community health workers and lay counsellors, have shown promise in some LMIC contexts as a strategy to extend the reach of prevention programmes, though evidence on their scalability and quality remains mixed.<sup>74</sup> Policymakers must therefore develop context-sensitive access strategies that do not presuppose digital infrastructure or clinical workforce capacities that are unavailable in many global settings.

### Ethical concerns in AI-driven risk prediction, data privacy, and algorithmic bias

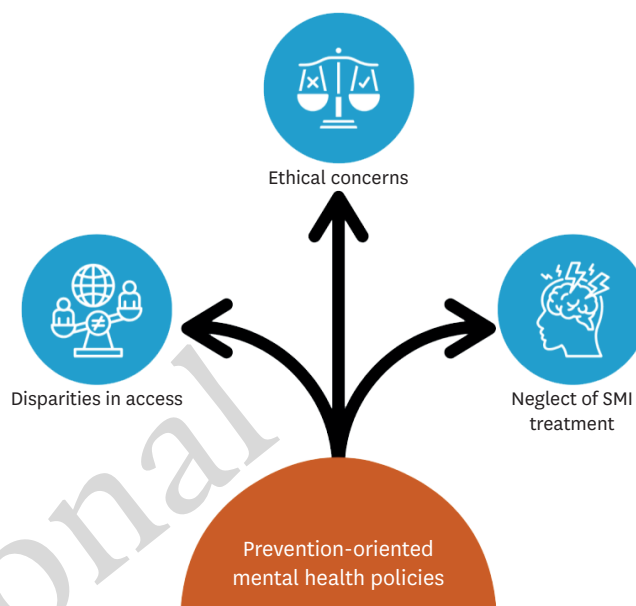
The integration of AI and genetic screening into mental health prevention strategies offers promising avenues for early detection and intervention.<sup>36</sup> However, these advancements raise significant ethical concerns that must be carefully addressed to ensure responsible implementation.

- Risk of false positives and stigma: AI algorithms and genetic screenings can yield false positives, incorrectly identifying individuals as high-risk for mental health disorders.<sup>14</sup> Such mislabeling can lead to unintended consequences, including discrimination in employment, insurance, and social relationships.<sup>75</sup> The stigma associated with being labelled as predisposed to mental illness can adversely affect an individual's self-esteem and social interactions.<sup>76</sup>
- Privacy and data security: AI-driven mental health tools often collect and analyze sensitive personal data, including genetic information, behavioural patterns, and psychological profiles.<sup>77</sup> The aggregation and storage of such data pose significant privacy and security risks. Unauthorized access or data breaches can lead to misuse of personal information.<sup>78</sup> Additionally, there are concerns about data being used without consent for purposes beyond the individual's control, such as in marketing or unauthorized research.<sup>79</sup>
- Algorithmic bias and discrimination: AI models trained predominantly on data from high-income, Western populations risk generating biased predictions when applied to underrepresented groups, including ethnic minorities, individuals from LMICs, and those from lower socioeconomic backgrounds.<sup>80</sup> Algorithmic bias can systematically misclassify or under-detect risk in certain populations, exacerbating rather than reducing existing mental health inequalities. This is a governance concern of particular relevance to global health contexts, where locally developed and validated tools are often unavailable.<sup>81</sup>

Addressing these ethical concerns requires the development of comprehensive guidelines and regulatory frameworks that prioritize individual rights, algorithmic transparency, and equity. This includes implementing strict data protection protocols, ensuring explainability in AI decision-making processes, and mandating inclusive data collection practices. Public engagement and community participation in the design of AI screening tools are also essential to navigating these complex ethical dimensions responsibly.

### Potential neglect of SMI treatment

The increasing emphasis on prevention in mental health policy has raised concerns about the potential diversion of resources from individuals with SMIs who require ongoing, intensive support. While preventive measures aim to reduce the incidence of mental health disorders, it is crucial to ensure that this shift does not lead to the neglect of those already affected by SMIs.



**Fig. 3.** Key challenges in implementing prevention-oriented mental health policies: disparities in access, ethical considerations, and potential neglect of SMI treatment. SMI = severe mental illness.

Recent policy changes have sparked debates regarding the balance between prevention and treatment. For instance, the UK government's planned overhaul of the NHS has been criticized for deprioritizing mental health and dementia care by reducing specific performance targets.<sup>82,83</sup> Critics argue that such changes could lead to neglect in mental health care, especially with over 2 million people on mental health waiting lists.<sup>35</sup>

Furthermore, the reallocation of funding toward preventive initiatives may inadvertently reduce the resources available for existing treatment programmes.<sup>84</sup> This shift poses ethical and practical challenges, as individuals with SMIs often rely on specialized services for their daily functioning and quality of life. Ensuring that these individuals continue to receive adequate care is essential to uphold their rights and well-being.<sup>85</sup> A balanced policy framework must therefore treat prevention investment and SMI treatment funding as complementary rather than competing priorities, with ring-fenced resources and clear accountability mechanisms to prevent erosion of treatment services under the guise of prevention reform.

While prevention-oriented mental health policies offer substantial benefits, their effective implementation faces critical challenges (Fig. 3). These include disparities in access to preventive care based on socioeconomic status, digital literacy, and geographic location; ethical concerns related to early detection, risk prediction, and data privacy; and the potential diversion of resources from individuals with SMI requiring ongoing treatment.

## FUTURE DIRECTIONS AND POLICY RECOMMENDATIONS

This section consolidates the policy implications emerging from the preceding analysis. Rather than presenting discrete recommendations across fragmented subsections, the

following priorities are proposed as an integrated framework to guide the equitable, ethical, and effective implementation of prevention-oriented mental health innovation.

### **Equitable access and global applicability**

Ensuring equitable implementation of preventive mental health interventions requires addressing the structural and infrastructural barriers identified in Section ‘Ethical and Accessibility Challenges in Prevention-Oriented Mental Health Policies.’ Key priorities include expanding access to digital mental health tools for underserved populations, including through investment in reliable and affordable digital infrastructure<sup>86,87</sup>; integrating mental health screenings into routine healthcare visits across all socioeconomic groups and health system levels<sup>88</sup>; and developing prevention strategies that are explicitly contextualized for LMICs, including community-based, low-technology, and task-shifting approaches that do not require specialist workforces or high-cost digital platforms.<sup>86</sup>

High-income country models of digital prevention cannot be transposed wholesale to LMIC settings without adaptation.<sup>89</sup> Future policy design should explicitly account for differing social determinants, health system capacities, and population needs, with investment in locally generated evidence to inform context-appropriate innovation.

### **Ethical governance and regulatory oversight of AI**

The integration of AI and predictive analytics into mental health prevention necessitates robust ethical and regulatory frameworks.<sup>90</sup> These should include: establishing guidelines for responsible AI use in mental health prediction, addressing informed consent, privacy, transparency, and algorithmic bias<sup>91</sup>; implementing the “Canada Protocol” or similar ethical checklists to guide AI deployment in suicide prevention and mental health<sup>92</sup>; enacting and enforcing legal safeguards against discrimination based on mental health risk scores, particularly in employment and insurance contexts<sup>93</sup>; and mandating diversity and representativeness in training datasets to minimize algorithmic bias across populations.<sup>94</sup>

### **Balanced and accountable resource allocation**

Achieving balance between preventive mental health initiatives and treatment services for those with SMI requires deliberate policy design.<sup>84</sup> Key strategies include maintaining dedicated funding streams for crisis care, inpatient services, and long-term SMI treatment alongside preventive investments; fostering interdisciplinary collaboration between prevention specialists and clinicians treating SMI, exemplified by the Collaborative Care Model<sup>95</sup>; and establishing accountability mechanisms to monitor whether prevention investment results in reductions to treatment funding, with corrective measures where inequities emerge.<sup>13</sup>

### **Longitudinal research and evidence generation**

Advancing preventive mental health strategies necessitates robust research to evaluate their long-term efficacy and identify potential unintended consequences. This includes conducting longitudinal studies to assess the effectiveness of early interventions across diverse populations and health systems<sup>15</sup>; investigating unintended consequences of prevention-focused policies, including stigma amplification, overdiagnosis, and treatment displacement<sup>4</sup>; and prioritizing research on the applicability and adaptation of prevention innovations in LMIC settings, where the evidence base remains critically underdeveloped.<sup>13</sup>

## CONCLUSION

The transition from treatment-focused to prevention-oriented mental health policies represents a significant shift in healthcare strategy, with far-reaching implications for how mental health innovation is conceptualized, funded, and governed. This approach has spurred innovations in early detection, digital health solutions, and integrated care models, contributing to a more proactive mental health care system. However, challenges such as disparities in access to preventive services, ethical concerns regarding the use of predictive analytics, algorithmic bias, and the potential neglect of individuals with SMIs necessitate careful and evidence-informed policy navigation. To address these issues, it is essential to implement equitable preventive interventions, establish robust ethical and regulatory frameworks for emerging technologies, explicitly incorporate global health perspectives, particularly regarding LMICs, and ensure balanced resource allocation between preventive initiatives and treatment services. By adopting a balanced, evidence-based approach, policymakers can ensure that mental health innovations effectively and equitably serve diverse populations, ultimately improving mental health outcomes across society.

### Limitations of the review

While this narrative review provides a comprehensive analysis of the shift from treatment-focused to prevention-oriented mental health policies, several limitations must be acknowledged. First, this review was conducted as a narrative review and does not adhere to the PRISMA guidelines, which are designed for systematic reviews. As a consequence, no formal record was kept of the number of studies identified, screened, or excluded across literature search phases. No structured data extraction template was employed, and no quantitative evidence synthesis was undertaken. These constraints are inherent to the narrative review format, which prioritises integrative conceptual synthesis over methodological rigour and reproducibility, and readers should interpret the findings accordingly.

Second, as a narrative review, this study does not follow a systematic review methodology, meaning there is a risk of selection bias in the included literature. While efforts were made to incorporate diverse and reputable sources, the absence of a standardised inclusion and exclusion process may limit the generalisability of findings.

Third, the review primarily emphasises English-language publications, which may exclude valuable insights from non-English-speaking regions. Since mental health policies and innovations vary considerably across countries, some culturally specific approaches to prevention may not be adequately represented.

Fourth, and critically, much of the available evidence reviewed here is drawn from high-income countries, particularly the US, UK, and Western Europe. LMICs are substantially underrepresented in the literature on prevention-oriented mental health innovation, which limits the global applicability of the conclusions drawn in this review. This is an acknowledged limitation that future research should explicitly address through targeted evidence synthesis from LMIC contexts.

Finally, the rapidly evolving nature of mental health policies and innovations means that some of the findings presented in this review may become outdated as new research and policy changes emerge. Future research should aim to conduct systematic reviews and empirical studies that assess the long-term impacts of prevention-focused policies, ensuring that innovation in mental health care remains evidence-based, equitable, and effective.

## REFERENCES

1. Zabelski S, Hollander M, Alexander A. Addressing inequities in access to mental healthcare: a policy analysis of community mental health systems serving minoritized populations in North Carolina. *Adm Policy Ment Health* 2024;51(4):543-53. [PUBMED](#) | [CROSSREF](#)
2. Bhugra D, Tasman A, Pathare S, Priebe S, Smith S, Torous J, et al. The WPA-Lancet Psychiatry Commission on the future of psychiatry. *Lancet Psychiatry* 2017;4(10):775-818. [PUBMED](#) | [CROSSREF](#)
3. Kirkbride JB, Anglin DM, Colman I, Dykxhoorn J, Jones PB, Patalay P, et al. The social determinants of mental health and disorder: evidence, prevention and recommendations. *World Psychiatry* 2024;23(1):58-90. [PUBMED](#) | [CROSSREF](#)
4. Fusar-Poli P, Correll CU, Arango C, Berk M, Patel V, Ioannidis JPA. Preventive psychiatry: a blueprint for improving the mental health of young people. *World Psychiatry* 2021;20(2):200-21. [PUBMED](#) | [CROSSREF](#)
5. Collins PY. What is global mental health? *World Psychiatry* 2020;19(3):265-6. [PUBMED](#) | [CROSSREF](#)
6. Adewuya AO, Ola B, Abimbola S, Abdulmalik J. Exploring contextual barriers and facilitators to sustaining mental health integration in primary care: a mixed-methods analysis of adaptive mechanisms and multi-level dynamics in Lagos, Nigeria. *J Glob Health* 2025;15:04305. [PUBMED](#) | [CROSSREF](#)
7. Uhlhaas P, Torous J. Digital tools for youth mental health. *NPJ Digit Med* 2019;2:104. [PUBMED](#) | [CROSSREF](#)
8. Riecher-Rössler A, Studerus E. High time for a paradigm shift in psychiatry. *World Psychiatry* 2016;15(2):131-3. [PUBMED](#) | [CROSSREF](#)
9. Birnbaum ML, Ernala SK, Rizvi AF, Arenare E, R Van Meter A, De Choudhury M, et al. Detecting relapse in youth with psychotic disorders utilizing patient-generated and patient-contributed digital data from Facebook. *NPJ Schizophr* 2019;5(1):17. [PUBMED](#) | [CROSSREF](#)
10. Zheutlin AB, Dennis J, Karlsson Linnér R, Moscatti A, Restrepo N, Straub P, et al. Penetrance and pleiotropy of polygenic risk scores for schizophrenia in 106,160 patients across four health care systems. *Am J Psychiatry* 2019;176(10):846-55. [PUBMED](#) | [CROSSREF](#)
11. Torous J, Linardon J, Goldberg SB, Sun S, Bell I, Nicholas J, et al. The evolving field of digital mental health: current evidence and implementation issues for smartphone apps, generative artificial intelligence, and virtual reality. *World Psychiatry* 2025;24(2):156-74. [PUBMED](#) | [CROSSREF](#)
12. Naslund JA, Aschbrenner KA, Araya R, Marsch LA, Unützer J, Patel V, et al. 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. [PUBMED](#) | [CROSSREF](#)
13. 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):1553-98. [PUBMED](#) | [CROSSREF](#)
14. Neiders I, Mežinska S, van Haren NEM. Ethical and social issues in prediction of risk of severe mental illness: a scoping review and thematic analysis. *BMC Psychiatry* 2025;25(1):501. [PUBMED](#) | [CROSSREF](#)
15. Arango C, Diaz-Caneja CM, McGorry PD, Rapoport J, Sommer IE, Vorstman JA, et al. Preventive strategies for mental health. *Lancet Psychiatry* 2018;5(7):591-604. [PUBMED](#) | [CROSSREF](#)
16. Trautmann S, Rehm J, Wittchen HU. The economic costs of mental disorders: do our societies react appropriately to the burden of mental disorders? *EMBO Rep* 2016;17(9):1245-9. [PUBMED](#) | [CROSSREF](#)
17. Kessler RC, Heeringa S, Lakoma MD, Petukhova M, Rupp AE, Schoenbaum M, et al. Individual and societal effects of mental disorders on earnings in the United States: results from the national comorbidity survey replication. *Am J Psychiatry* 2008;165(6):703-11. [PUBMED](#) | [CROSSREF](#)
18. Stelmach R, Kocher EL, Kataria I, Jackson-Morris AM, Saxena S, Nugent R. The global return on investment from preventing and treating adolescent mental disorders and suicide: a modelling study. *BMJ Glob Health* 2022;7(6):e007759. [PUBMED](#) | [CROSSREF](#)
19. Le LKD, Esturas AC, Mihalopoulos C, Chiotelis O, Bucholz J, Chatterton ML, et al. Cost-effectiveness evidence of mental health prevention and promotion interventions: a systematic review of economic evaluations. *PLoS Med* 2021;18(5):e1003606. [PUBMED](#) | [CROSSREF](#)
20. Sampaio F, Nystrand C, Feldman I, Mihalopoulos C. Evidence for investing in parenting interventions aiming to improve child health: a systematic review of economic evaluations. *Eur Child Adolesc Psychiatry* 2024;33(2):323-55. [PUBMED](#) | [CROSSREF](#)
21. Tsiachristas A, Thomas T, Leal J, Lennox B. The cost-effectiveness of early care by dedicated teams for chronic mental health conditions: results from the Oxford-CLAHRC on Early Intervention Psychosis services in England. *Int J Integr Care* 2016;16(6):294. [CROSSREF](#)
22. Ramesh S. The economic impact of workplace mental health initiatives: a comprehensive analysis of return on investment and organizational performance. *J Ment Health Issue Behav* 2024;4(6):1-12. [CROSSREF](#)

23. Muñoz RF, Cooper LA. The COVID-19 pandemic and mental health—implementing evidence-based interventions to advance equity and reverse a worsening crisis. *JAMA Health Forum* 2022;3(4):e221282. [PUBMED](#) | [CROSSREF](#)
24. Ma KKY, Anderson JK, Burn AM. Review: school-based interventions to improve mental health literacy and reduce mental health stigma - a systematic review. *Child Adolesc Ment Health* 2023;28(2):230-40. [PUBMED](#) | [CROSSREF](#)
25. Hale DR, Viner RM. How adolescent health influences education and employment: investigating longitudinal associations and mechanisms. *J Epidemiol Community Health* 2018;72(6):465-70. [PUBMED](#) | [CROSSREF](#)
26. Crosland P, Marshall DA, Hosseini SH, Ho N, Vacher C, Skinner A, et al. Incorporating complexity and system dynamics into economic modelling for mental health policy and planning. *Pharmacoeconomics* 2024;42(12):1301-15. [PUBMED](#) | [CROSSREF](#)
27. Kerrie G, Grace P, Paul C, Stephen P, Heather M, Michelle OD, et al. The social determinants of suicide: an umbrella review. *medRxiv*. August 12, 2024. <https://doi.org/10.1101/2024.08.09.24311718>. [CROSSREF](#)
28. Caldas de Almeida JM. Mental health services and public mental health: challenges and opportunities. *World Psychiatry* 2015;14(1):51-3. [PUBMED](#) | [CROSSREF](#)
29. Substance Abuse and Mental Health Services Administration. *Treatment for Suicidal Ideation, Self-Harm, and Suicide Attempts Among Youth (SAMHSA Publication No. PEP20-06-01-002)*. Rockville, MD, USA: National Mental Health and Substance Use Policy Laboratory, Substance Abuse and Mental Health Services Administration; 2020.
30. Morris-Perez P, Abenavoli R, Benzekri A, Rosenbach-Jordan S, Bocchieri GR. Preventing adolescent suicide: recommendations for policymakers, practitioners, program developers, and researchers. *Child Policy Nexus* 2023;36(2-3):1-32. [CROSSREF](#)
31. Elgar FJ. 81. Trends and socioeconomic inequalities in youth mental health, 2019 to 2022: evidence from the Gallup World Poll. *J Adolesc Health* 2024;74(3):S43-4. [CROSSREF](#)
32. Di Forti M, Quattrone D, Freeman TP, Tripoli G, Gayer-Anderson C, Quigley H, et al. The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): a multicentre case-control study. *Lancet Psychiatry* 2019;6(5):427-36. [PUBMED](#) | [CROSSREF](#)
33. Hällqvist J, Bartl M, Dakna M, Schade S, Garagnani P, Bacalini MG, et al. Plasma proteomics identify biomarkers predicting Parkinson's disease up to 7 years before symptom onset. *Nat Commun* 2024;15(1):4759. [PUBMED](#) | [CROSSREF](#)
34. Torous J, Jän Myrick K, 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. [PUBMED](#) | [CROSSREF](#)
35. O'Connor RC, Worthman CM, Abanga M, Athanassopoulou N, Boyce N, Chan LF, et al. Gone too soon: priorities for action to prevent premature mortality associated with mental illness and mental distress. *Lancet Psychiatry* 2023;10(6):452-64. [PUBMED](#) | [CROSSREF](#)
36. Mikaeili N, Naeim M, Narimani M. Reimagining mental health with artificial intelligence: early detection, personalized care, and a preventive ecosystem. *J Multidiscip Healthc* 2025;18:7355-73. [PUBMED](#) | [CROSSREF](#)
37. Wray NR, Lee SH, Mehta D, Vinkhuyzen AAE, Dudbridge F, Middeldorp CM. Research review: polygenic methods and their application to psychiatric traits. *J Child Psychol Psychiatry* 2014;55(10):1068-87. [PUBMED](#) | [CROSSREF](#)
38. Wray NR, Lin T, Austin J, McGrath JJ, Hickie IB, Murray GK, et al. From basic science to clinical application of polygenic risk scores: a primer. *JAMA Psychiatry* 2021;78(1):101-9. [PUBMED](#) | [CROSSREF](#)
39. Insel TR, Cuthbert BN. Medicine. Brain disorders? Precisely. *Science* 2015;348(6234):499-500. [PUBMED](#) | [CROSSREF](#)
40. Schmaal L, Veltman DJ, van Erp TGM, Sämann PG, Frodl T, Jahanshad N, et al. Subcortical brain alterations in major depressive disorder: findings from the ENIGMA Major Depressive Disorder working group. *Mol Psychiatry* 2016;21(6):806-12. [PUBMED](#) | [CROSSREF](#)
41. Cannon TD, Yu C, Addington J, Bearden CE, Cadenhead KS, Cornblatt BA, et al. An individualized risk calculator for research in prodromal psychosis. *Am J Psychiatry* 2016;173(10):980-8. [PUBMED](#) | [CROSSREF](#)
42. Insel TR. Digital phenotyping. *JAMA* 2017;318(13):1215-6. [PUBMED](#) | [CROSSREF](#)
43. Guntuku SC, Yaden DB, Kern ML, Ungar LH, Eichstaedt JC. Detecting depression and mental illness on social media: an integrative review. *Curr Opin Behav Sci* 2017;18:43-9. [CROSSREF](#)
44. Ahmadpour N, Weatherall AD, Menezes M, Yoo S, Hong H, Wong G. Synthesizing multiple stakeholder perspectives on using virtual reality to improve the periprocedural experience in children and adolescents: survey study. *J Med Internet Res* 2020;22(7):e19752. [PUBMED](#) | [CROSSREF](#)

45. Mansoor MA, Ansari KH. Early detection of mental health crises through artificial-intelligence-powered social media analysis: a prospective observational study. *J Pers Med* 2024;14(9):958. [PUBMED](#) | [CROSSREF](#)
46. Lewis CM, Vassos E. Polygenic risk scores: from research tools to clinical instruments. *Genome Med* 2020;12(1):44. [PUBMED](#) | [CROSSREF](#)
47. Muralidharan V, Schamroth J, Youssef A, Celi LA, Daneshjou R. Applied artificial intelligence for global child health: addressing biases and barriers. *PLOS Digit Health* 2024;3(8):e0000583. [PUBMED](#) | [CROSSREF](#)
48. Lattie EG, Stiles-Shields C, Graham AK. An overview of and recommendations for more accessible digital mental health services. *Nat Rev Psychol* 2022;1(2):87-100. [PUBMED](#) | [CROSSREF](#)
49. Fitzpatrick KK, Darcy A, Vierhile M. Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): a randomized controlled trial. *JMIR Ment Health* 2017;4(2):e19. [PUBMED](#) | [CROSSREF](#)
50. Firth J, Torous J, Nicholas J, Carney R, Prata A, Rosenbaum S, et al. The efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomized controlled trials. *World Psychiatry* 2017;16(3):287-98. [PUBMED](#) | [CROSSREF](#)
51. Flett JAM, Hayne H, Riordan BC, Thompson LM, Conner TS. Mobile mindfulness meditation: a randomised controlled trial of the effect of two popular apps on mental health. *Mindfulness* 2019;10:863-76. [CROSSREF](#)
52. Wiebe A, Kannen K, Selaskowski B, Mehren A, Thöne AK, Pramme L, et al. Virtual reality in the diagnostic and therapy for mental disorders: a systematic review. *Clin Psychol Rev* 2022;98(8):102213. [PUBMED](#) | [CROSSREF](#)
53. Carl E, Stein AT, Levihn-Coon A, Pogue JR, Rothbaum B, Emmelkamp P, et al. Virtual reality exposure therapy for anxiety and related disorders: a meta-analysis of randomized controlled trials. *J Anxiety Disord* 2019;61:27-36. [PUBMED](#) | [CROSSREF](#)
54. Deng W, Hu D, Xu S, Liu X, Zhao J, Chen Q, et al. The efficacy of virtual reality exposure therapy for PTSD symptoms: a systematic review and meta-analysis. *J Affect Disord* 2019;257:698-709. [PUBMED](#) | [CROSSREF](#)
55. Linardon J, Torous J, Firth J, Cuijpers P, Messer M, Fuller-Tyszkiewicz M. Current evidence on the efficacy of mental health smartphone apps for symptoms of depression and anxiety. A meta-analysis of 176 randomized controlled trials. *World Psychiatry* 2024;23(1):139-49. [PUBMED](#) | [CROSSREF](#)
56. Mayor E. Chatbots and mental health: a scoping review of reviews. *Curr Psychol* 2025;44:13619-40. [CROSSREF](#)
57. Freeman D, Reeve S, Robinson A, Ehlers A, Clark D, Spanlang B, et al. Virtual reality in the assessment, understanding, and treatment of mental health disorders. *Psychol Med* 2017;47(14):2393-400. [PUBMED](#) | [CROSSREF](#)
58. Alegria M, Zhen-Duan J, O'Malley IS, DiMarzio K. A new agenda for optimizing investments in community mental health and reducing disparities. *Am J Psychiatry* 2022;179(6):402-16. [PUBMED](#) | [CROSSREF](#)
59. Fazel M, Hoagwood K, Stephan S, Ford T. Mental health interventions in schools 1: mental health interventions in schools in high-income countries. *Lancet Psychiatry* 2014;1(5):377-87. [PUBMED](#) | [CROSSREF](#)
60. Doran CM, Kinchin I. A review of the economic impact of mental illness. *Aust Health Rev* 2019;43(1):43-8. [PUBMED](#) | [CROSSREF](#)
61. Goetzel RZ, Roemer EC, Holvingue C, Fallin MD, McCleary K, Eaton W, et al. Mental health in the workplace: a call to action proceedings from the mental health in the workplace-public health summit. *J Occup Environ Med* 2018;60(4):322-30. [PUBMED](#) | [CROSSREF](#)
62. Dionisi AM, Barling J. It hurts me too: examining the relationship between male gender harassment and observers' well-being, attitudes, and behaviors. *J Occup Health Psychol* 2018;23(3):303-19. [PUBMED](#) | [CROSSREF](#)
63. Campo JV, Geist R, Kolko DJ. Integration of pediatric behavioral health services in primary care: improving access and outcomes with collaborative care. *Can J Psychiatry* 2018;63(7):432-8. [PUBMED](#) | [CROSSREF](#)
64. Reist C, Petiwala I, Latimer J, Raffaelli SB, Chiang M, Eisenberg D, et al. Collaborative mental health care: a narrative review. *Medicine (Baltimore)* 2022;101(52):e32554. [PUBMED](#) | [CROSSREF](#)
65. Edwards BM, Meudell A, Thomas E, Broeckelmann E, Roberts E, Farmer M, et al. Institutional abuse, neglect and harm in UK community mental health services: a scoping review of the peer-reviewed evidence. *Health Expect* 2025;28(5):e70403. [PUBMED](#) | [CROSSREF](#)
66. Walsh CG, Chaudhry B, Dua P, Goodman KW, Kaplan B, Kavuluru R, et al. Stigma, biomarkers, and algorithmic bias: recommendations for precision behavioral health with artificial intelligence. *JAMIA Open* 2020;3(1):9-15. [PUBMED](#) | [CROSSREF](#)
67. Singh GK, Girmay M, Allender M, Ramey CT. Digital divide: marked disparities in computer and broadband internet use and associated health inequalities in the United States. *Int J Transl Med Res Public Health* 2020;4(1):1-16. [CROSSREF](#)

68. Packness A, Halling A, Simonsen E, Waldorff FB, Hastrup LH. Are perceived barriers to accessing mental healthcare associated with socioeconomic position among individuals with symptoms of depression? Questionnaire-results from the Lolland-Falster Health Study, a rural Danish population study. *BMJ Open* 2019;9(3):e023844. [PUBMED](#) | [CROSSREF](#)
69. Zhu JM, Huntington A, Haeder S, Wolk C, McConnell KJ. Insurance acceptance and cash pay rates for psychotherapy in the US. *Health Aff Sch* 2024;2(9):qxae110. [PUBMED](#) | [CROSSREF](#)
70. Friis-Healy EA, Nagy GA, Kollins SH. It is time to REACT: opportunities for digital mental health apps to reduce mental health disparities in racially and ethnically minoritized groups. *JMIR Ment Health* 2021;8(1):e25456. [PUBMED](#) | [CROSSREF](#)
71. Saeed SA, Masters RMR. Disparities in health care and the digital divide. *Curr Psychiatry Rep* 2021;23(9):61. [PUBMED](#) | [CROSSREF](#)
72. Roberts ET, Mehrotra A. Assessment of disparities in digital access among Medicare beneficiaries and implications for telemedicine. *JAMA Intern Med* 2020;180(10):1386-9. [PUBMED](#) | [CROSSREF](#)
73. Guerrero APS, Balon R, Beresin EV, Louie AK, Coverdale JH, Brenner A, et al. Rural mental health training: an emerging imperative to address health disparities. *Acad Psychiatry* 2019;43(1):1-5. [PUBMED](#) | [CROSSREF](#)
74. Javadi D, Feldhaus I, Mancuso A, Ghaffar A. Applying systems thinking to task shifting for mental health using lay providers: a review of the evidence. *Glob Ment Health (Camb)* 2017;4:e14. [PUBMED](#) | [CROSSREF](#)
75. Brannan C, Foulkes AL, Lázaro-Muñoz G. Preventing discrimination based on psychiatric risk biomarkers. *Am J Med Genet B Neuropsychiatr Genet* 2019;180(2):159-71. [PUBMED](#) | [CROSSREF](#)
76. Yang LH, Grivel MM, Blasco D, Girgis RR, Huang D, Woodberry KA, et al. Parsing stigma's relationship with the psychosocial functioning of youth identified as at clinical high risk for psychosis: evaluating whether symptom stigma or labelling stigma is stronger. *Br J Psychiatry* 2024;226(5):1-9. [PUBMED](#) | [CROSSREF](#)
77. Hong Y, Xia Z. AI-driven innovations in psychological assessment: multimodal data, intelligent analytics, and ethical challenges. Proceedings of 2025 International Conference on Artificial Intelligence and Smart Manufacturing (ICAISM 2025); May 9–11, 2025; Chongqing, China. New York, NY, USA: Association for Computing Machinery; 2025, 854-9.
78. Webster P. Patient data in the cloud. *Lancet Digit Health* 2019;1(8):e391-2. [CROSSREF](#)
79. Perakslis E, Coravos A. Is health-care data the new blood? *Lancet Digit Health* 2019;1(1):e8-9. [PUBMED](#) | [CROSSREF](#)
80. Srinivasan R, Chander A. Biases in AI systems. *Commun ACM* 2021;64(8):44-9. [CROSSREF](#)
81. Riddick TA, Choo EK. Natural language processing to identify substance misuse in the electronic health record. *Lancet Digit Health* 2022;4(6):e401-2. [PUBMED](#) | [CROSSREF](#)
82. Anderson M, Pitchforth E, Asaria M, Brayne C, Casadei B, Charlesworth A, et al. LSE-Lancet Commission on the future of the NHS: re-laying the foundations for an equitable and efficient health and care service after COVID-19. *Lancet* 2021;397(10288):1915-78. [PUBMED](#) | [CROSSREF](#)
83. Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D, et al. Dementia prevention, intervention, and care. *Lancet* 2017;390(10113):2673-734. [PUBMED](#) | [CROSSREF](#)
84. Freeman M. Investing for population mental health in low and middle income countries-where and why? *Int J Ment Health Syst* 2022;16(1):38. [PUBMED](#) | [CROSSREF](#)
85. Moureau L, Verhofstadt M, Liégeois A. Mapping the ethical aspects in end-of-life care for persons with a severe and persistent mental illness: a scoping review of the literature. *Front Psychiatry* 2023;14:1094038. [PUBMED](#) | [CROSSREF](#)
86. Murphy JK, Saker S, Ananyo Chakraborty P, Chan YMM, Michalak EE, Irrarazaval M, et al. Advancing equitable access to digital mental health in the Asia-Pacific region in the context of the COVID-19 pandemic and beyond: a modified Delphi consensus study. *PLOS Glob Public Health* 2024;4(6):e0002661. [PUBMED](#) | [CROSSREF](#)
87. Berardi C, Antonini M, Jordan Z, Wechtler H, Paolucci F, Hinwood M. Barriers and facilitators to the implementation of digital technologies in mental health systems: a qualitative systematic review to inform a policy framework. *BMC Health Serv Res* 2024;24(1):243. [PUBMED](#) | [CROSSREF](#)
88. Maulik PK, Thornicroft G, Saxena S. Roadmap to strengthen global mental health systems to tackle the impact of the COVID-19 pandemic. *Int J Ment Health Syst* 2020;14:57. [PUBMED](#) | [CROSSREF](#)
89. Chau LW, Lam RW, Minas H, Hayashi K, Nguyen VC, O'Neil J. Digital health interventions for depression and anxiety in low- and middle-income countries: rapid scoping review. *JMIR Ment Health* 2025;12:e68296. [PUBMED](#) | [CROSSREF](#)
90. Fanarioti AK, Karpouzis K. Artificial intelligence and the future of mental health in a digitally transformed world. *Computers* 2025;14(7):259. [CROSSREF](#)

91. Beg MJ Responsible AI integration in mental health research: issues, guidelines, and best practices. *Indian J Psychol Med* 2025;47(1):5-8. [PUBMED](#) | [CROSSREF](#)
92. Mörch CM, Gupta A, Mishara BL. Canada protocol: an ethical checklist for the use of artificial intelligence in suicide prevention and mental health. *Artif Intell Med* 2020;108:101934. [PUBMED](#) | [CROSSREF](#)
93. Stahl BC, Schroeder D, Rodrigues R. *Ethics of Artificial Intelligence: Case Studies and Options for Addressing Ethical Challenges*. Cham, Switzerland: Springer Cham; 2023. [CROSSREF](#)
94. Tat E, Bhatt DL, Rabbat MG. Addressing bias: artificial intelligence in cardiovascular medicine. *Lancet Digit Health* 2020;2(12):e635-6. [PUBMED](#) | [CROSSREF](#)
95. Reilly S, Hobson-Merrett C, Gibbons B, Jones B, Richards D, Plappert H, et al. Collaborative care approaches for people with severe mental illness. *Cochrane Database Syst Rev* 2024;5(5):CD009531. [PUBMED](#) | [CROSSREF](#)

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