



COMPONENT 1 – 2 BLOGS

Population Health and Digital Health Promotion

Critical analysis of existing and designed digital mental-health interventions

Student Name	Priti Ashokbhai Ramoliya
Student Number	2506176
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Lecturer's Name	Diola Bijlhout / Dr Ping Wu
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Combating the Silent Crisis: Using AI-Driven Mental Wellbeing Platforms for At-Risk Populations

The public-health challenge

Mental ill-health is a “silent crisis”: need is huge, and treatment is scarce and stigmatised. One billion people have a mental health condition, but less than 10% of those with psychosis receive formal care in low-income countries, while more than 50% of those in higher-income countries do. Depression and anxiety also take a toll on the global economy, estimated to be approximately US\$1 trillion each year. This is an inequity, and the need for scalable early support is visualised in Figure 1 (World Health Organisation, 2025).

How the technology promotes health

Wysa is an already-established smartphone platform featuring an AI-driven conversational interface and clinically validated cognitive behaviour therapy (CBT) exercises, mood check-ins, mindfulness, sleep and a human coach, if desired.

The health promotion logic map resembles COM-B in the following ways: psychoeducation increases psychological capability; opportunity increases when access is private and 24/7; and prompts, self-monitoring, and achievable exercises increase motivation. It can shift support upstream for those experiencing waiting lists, chronic illness, shift work or stigma — if it is done in addition to professional support (Michie, van Stralen and West, 2011; Chang et al., 2024).

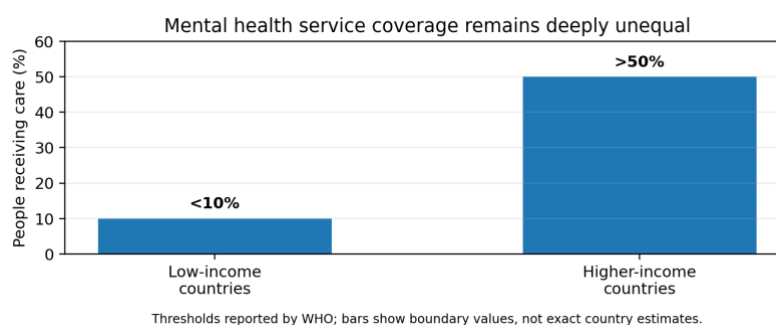


Figure 1. Reported mental-health service coverage thresholds by country-income group

Source: Author's visualisation based on World Health Organisation (2025).

Critical impact, limitations and solutions

Researchers reach different conclusions: platform-specific studies report encouraging engagement, while pooled independent evidence suggests only small symptom improvements. Small decreases in depression, anxiety and stress were reported in a meta-analysis of 48 randomised trials with 28,071 participants in 2026.

The evidence specific to the Wysa app is limited: 68 adults who had arthritis or diabetes participated in a four-week trial, which showed a decrease in depression and anxiety; a no-treatment group and no improvement was seen in stress. Of the 527 Singapore healthcare workers, 80.1% completed at least two sessions, but the descriptive design was not necessarily effective – two of the authors were employed by Wysa (Mokhtari Masoumi Alamdarloo et al., 2026; MacNeill, Doucet and Luke, 2024; Chang et al., 2024). While guided SilverCloud iCBT has more evidence for routine service and cost-effectiveness, Wysa is more conversational and available right away without trained supporter time. Both evidence bases are incomplete, and Wysa is not clinically proven to be superior—but it does have a more accessible advantage in terms of ease of use (Richards et al., 2020).

Conversational breakdowns, digital exclusion, privacy risks, weak long-term evidence, and potentially not identifying a crisis or culturally-specific distress are balanced against reach, anonymity, consistency and low cost.

In young people, benefits were limited to depressive symptoms, with no effects on anxiety, stress and wellbeing after adjustment for publication bias. There is a need for independent trials with active control, longer follow-up, co-design in multiple languages, accessibility and subgroup audits, data minimisation, and human escalation in shortfalls. The role of the clinician is essential for safety, and for the commissioning to be successful, it must be based on verified recovery and equitable reach, not downloads (Feng et al., 2025; Guo et al., 2024).

Key takeaway: Wysa is a good tool for early, low-risk support, but it needs to augment clinicians and be commissioned for recovery, safety and equitable reach, not to achieve downloads

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From Screens to Sanity: Inventing AI and Wearable Tech to Revolutionise Public Mental Health

The public-health challenge

The treatment gap requires prevention that is cognizant of deterioration before crisis. Wearables can measure sleep, movement, and cardiovascular patterns 24/7 – but, for population health value, it is all about the timing of the action. In 2026, there was a pooled high performance for depression detection, but only 0.65 specificity for predicting future episodes of depression, and fragmented methods and evidence focused on high-income settings were reported in a review in July 2026. This is NOT automated diagnosis but innovation (Liu et al., 2026; Alam et al., 2026).

How the technology promotes health

I think the platform should be a smartwatch-phone option that is opt-in for students, shift workers, carers and those with chronic illnesses, called MindPulse. It integrates sleep regularity, resting heart rate, heart-rate variability and activity with optional ten-second mood check-ins.

Instead of giving a generic “stress score”, AI models are recognising the user's baseline and indicating uncertainty about their stress level. Change triggers paced breathing, movement, sleep planning, cognitive reframing or contacting support intervention for up to 60-120 seconds, which will only escalate with consent, or with an immediate safety protocol (Zhang et al., 2025; Kargarandehkordi et al., 2025).

Why could this be more effective? Unlike conversation-focused applications like Wysa or module-based iCBT, MindPulse does not require the user to seek support; instead, it senses personalised change and provides an action of 60-120 seconds when support might be most needed. This could be more preventive and less burden but it also needs to be proven, not assumed (Zhang et al., 2025; Kargarandehkordi et al., 2025).

MindPulse: from passive signals to proportionate behaviour support

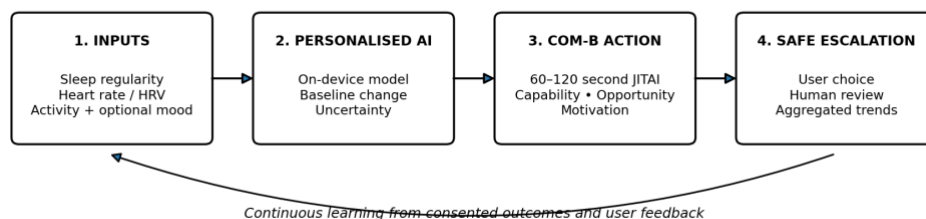


Figure 2. MindPulse intervention pathway from sensing to behaviour support

Source: Author's design informed by Zhang et al. (2025), Kargarandehkordi et al. (2025), Michie, van Stralen and West (2011), and Rogan, Bucci and Firth (2024).

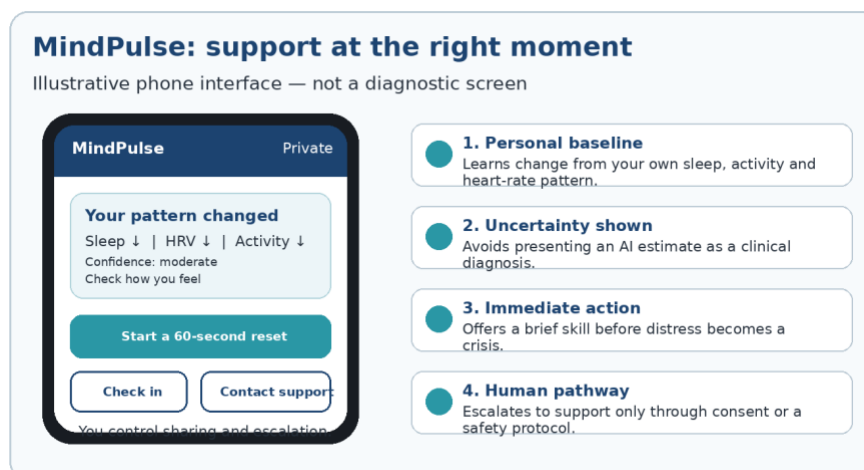


Figure 3. MindPulse interface mock-up showing uncertainty, micro-action and support choices.

Source: Author's design.

Critical impact, limitations and solutions

Figure 2 shows the behavioural pathway. These micro-skills and feedback improve capability, context-sensitive prompts create opportunity, autonomy and choice, and visible progress supports motivation, according to COM-B.

The design approach is based on sensing and not only the display of risk. Public health teams are only given trends that have been anonymised and aggregated so they can target their outreach efforts, and individuals still have control.

This may take prevention beyond clinics; however, stress that is wearable and self-reported may reflect different constructs and should be interpreted with lived experience of the stress (Michie, van Stralen and West, 2011; Siepe et al., 2025).

Exercise, illness, being pregnant, and insecure work may be confused as distress, causing false reassurance, alert fatigue, or health anxiety in the user of MindPulse. The accuracy of the sensors varies by skin tone, disability, and device; costs may increase exclusion; and access by employer or insurer can become a form of surveillance during promotion.

Development should begin with participatory co-design and usability testing, followed by feasibility studies and then randomised or stepped-wedge evaluation of harms, behaviour change, service use and equity—not prediction accuracy alone (Rogan, Bucci and Firth, 2024; Hehlmann et al., 2026)

Implementation reality: These costs cover software development, wearable loans, secure hosting, clinical-safety staff, interoperability and a reliable escalation service. NHS adoption would need DTAC assurance and evidence that is commensurate with risk; short pilots or one-off grants are unlikely to be a viable means of national scale. Practical options are an Integrated Care Board pilot or a device-loan scheme and staged procurement; only scale up if clinical, equity and budget-impact outcomes are better (Berardi et al., 2024; NHS England, 2026; National Institute for Health and Care Excellence, 2022).

Key takeaway: MindPulse is promising because it can connect personalised sensing to timely action, but it is better if it can prevent deterioration without creating more surveillance, anxiety or inequality

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