Guest editorial: Digital technologies and mental health management: opportunities and challenges

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Introduction

Mental health has become one of the most pressing global health challenges of the 21st century. According to the World Health Organization, nearly one billion people live with a mental disorder, yet the vast majority receive no treatment due to persistent stigma, resource shortages and fragmented service delivery [1]. The rapid advancement of digital technologies – artificial intelligence (AI), big data analytics, mobile health applications, wearable devices and online platforms – has opened transformative possibilities for how mental health services are delivered, managed and experienced. The pervasive integration of digital technologies into mental health management represents one of the most transformative shifts in contemporary healthcare and organisational practice. From AI-powered chatbots and online counselling platforms to wearable sensors and social media-based risk detection, technology is reshaping how mental health is understood, monitored and supported.

At the same time, these technologies introduce novel risks: technostress, privacy violations, algorithmic bias, erosion of therapeutic relationships and digital divides that may exacerbate existing inequalities. This transformation of the widespread use of new technologies in mental health management brings both promise and peril: while digital tools can enhance access, personalisation and efficiency, they also raise profound concerns about privacy, equity, ethical governance and unintended psychological consequences for both patients and professionals.

Thus, it requires careful attention to the dual nature of technology's psychological effects – both positive (eustress) and negative (distress) – as well as to the ethical, legal and social implications of AI-driven mental health management. This special issue of *Industrial Management and Data Systems* (IMDS) responds to the urgent need for rigorous, interdisciplinary research at the intersection of digital technologies and mental health management. To sum up, this special issue brings together ten original articles that examine these opportunities and challenges across diverse settings: healthcare professionals using smart systems, scholars and workers interacting with generative AI, elderly users adopting digital tools and individuals seeking mental health support online.

Summary of articles

One stream of research in this special issue focuses on the dual-pathway effects of technology-induced stress. Booker, Islam, Cafferey, Townsend and Ong ("When technostress meets telepressure: a multi-dimensional well-being approach") (Booker *et al.*, 2026) investigate how workplace telepressure amplifies the negative impact of technostress on work-related well-being but not on psychological well-being, revealing that technological stressors affect different well-being domains differently. Gu, Zhao, Yang, Jain, Srite, Liang and Li ("Where are eustress and distress from? An examination of smart healthcare system use") (Gu *et al.*, 2026) demonstrate that smart healthcare system demands increase distress while resources increase eustress and that espoused organisational cultural values are key antecedents of perceived resources. Their post-hoc U-shaped relationship between distress and satisfaction suggests that high levels of distress may paradoxically correlate with increased satisfaction among healthcare professionals.

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Another stream examines AI's impact on knowledge workers. Gao, Ding, Zhang, Liang and Zuo ("The impact of AI usage, literacy and proactive innovation behavior on scholars' mental health") (Gao *et al*., 2026) find that AI usage intensity and diversity reduce anxiety, stress and depression through proactive innovation behaviour, with AI literacy moderating these relationships in complex ways. Ferrarini and Leonelli ("Risks and benefits posed by artificial intelligence to workers' mental health: a systematic literature review") (Ferrarini and Leonelli, 2026) synthesise 60 articles to evaluate the direct and indirect effects of AI on workers' mental health, revealing that most research focuses on benefits rather than risks and healthcare dominates the literature while business and psychology remain underrepresented.

Understanding and responding to mental health needs in digital spaces is the focus of three contributions. Liu, Wang and Khan ("Understanding medical information and emotional support needs in mental health questions with large language models") (Liu *et al*., 2026a) propose the multi-needs and context recognition (MNCR) framework and the MHQ-MedEmo benchmark dataset, showing that dense fine-tuned LLMs strike the best balance between accuracy and latency for jointly recognising medical and emotional needs. Liu, Liu, Si and Cui ("Which voice aids mental health interactions? Exploring dual-pathway effects of voice anthropomorphism of AI health chatbots on patient anxiety") (Liu *et al*., 2026b) demonstrate that voice anthropomorphism reduces patient anxiety through affective and cognitive pathways, and that empathic content weakens these mediation effects – a substitution effect with important design implications. Hu, Jia, Zhu, Chang, Takahashi and Zhu ("The impact of privacy enhancing technologies in online mental health platforms on users' disclosure intention") (Hu *et al*., 2026) compare four PETs and find that image tampering and anonymity have the strongest effects and that psychological distance mediates the relationship between PETs and disclosure intention.

Two articles address depressive tendency detection and early intervention. Deng, Wang, Yan and Liu ("Depressive tendency detection based on contextual modeling and its exploratory use in intervention") (Deng *et al*., 2026) propose a contextual modelling framework that integrates multi-dimensional features and achieves 90.5% accuracy and demonstrate that contextually timed interventions produce significantly better emotional outcomes. Yang, Qiao, Lin and Liu ("Leveraging deep learning model to visually detect changes in depression tendency of social media users") (Yang *et al*., 2026) develop a multi-instance LSTM model that visualises depression probability trajectories over time, offering a weakly supervised and interpretable approach for large-scale screening.

Finally, Zhai, Wei, Gao and Lu ("The impact of ICT use on mental health among the elderly: policy and environmental perspectives") (Zhai *et al*., 2026) apply ecological systems theory to longitudinal panel data and find that ICT use significantly improves older adults' mental health and mediates the effect of digital policies, but that direct effects of digital environment are not significant, highlighting the importance of actual behavioural engagement and revealing heterogeneity across urban–rural and regional contexts.

Together, these 10 articles advance our understanding of digital technologies and mental health management by demonstrating the duality of technology's effects, the importance of multi-dimensional measurement, the critical role of human factors (literacy, trust, control and psychological distance) and the necessity of integrating detection with intervention. They also reveal significant methodological and disciplinary gaps that call for future research using longitudinal, qualitative and mixed methods and extending to understudied populations and sectors. We hope this collection serves as a foundational resource for researchers, practitioners and policymakers seeking to harness digital technologies for mental health while mitigating their risks.

Future research directions

While this special issue makes significant strides, it also reveals important gaps that warrant further investigation. First, much of the existing research remains cross-sectional. Longitudinal designs are urgently needed to track how AI-related stress and eustress evolve over time, particularly as AI systems become more deeply embedded in daily work routines.

Second, the majority of studies focus on individual-level outcomes. Future research should examine team- and organisational-level dynamics, such as how AI influences group cohesion, collaboration and collective well-being. Third, although several articles touch on intervention design, few directly test the long-term effectiveness of specific AI-based mental health support systems in real-world organisational settings. Finally, as AI capabilities continue to advance, new forms of human–AI interaction – such as emotionally intelligent agents and immersive virtual environments – will raise fresh questions about autonomy, authenticity and psychological safety that have yet to be systematically studied.

We therefore invite ongoing research that adopts longitudinal designs, multi-stakeholder perspectives and rigorous ethical frameworks. Interdisciplinary collaborations between information systems researchers, psychologists, healthcare professionals and policymakers will be essential to ensure that digital technologies fulfil their promise of healthier, more resilient lives.

Conclusion

These articles in this special issue paint a rich and nuanced picture of the digital mental health landscape. First, the impact of digital technologies on mental health is rarely unidirectional; rather, it depends on contextual factors such as task design, organisational culture, user literacy and the presence of complementary supports. Second, employee and patient well-being must be understood as a multidimensional construct – encompassing work, psychological and life domains – each of which may respond differently to technological interventions. Third, proactive coping and thoughtful design are essential: AI literacy, privacy control, voice anthropomorphism and timely intervention can turn potential stressors into sources of eustress and engagement.

We express our sincere gratitude to the Editor-in-Chief and the editorial team of *IMDS* for their support in bringing this special issue to fruition. We also extend our deepest thanks to the many authors and reviewers whose expertise and dedication made this collection possible. It is our hope that this issue serves as a catalyst for further interdisciplinary research and practical innovation at the intersection of AI and employee mental health.

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Note

1. https://www.who.int/news/item/02-09-2025-over-a-billion-people-living-with-mental-health-conditions-services-require-urgent-scale-up

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