Predictive AI Models for Employee Mental Health: A Framework for Corporate Wellness

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***Abstract*—The rising prevalence of mental health challenges in the workplace necessitates proactive approaches to employee well-being. Predictive artificial intelligence (AI) provides the potential to identify early warning signs of stress, burnout, and other psychological risks by analysing multimodal data, including psychometric assessments, digital behaviour patterns, physiological signals, and organizational metrics. This conceptual paper presents a framework for the integration of predictive AI within corporate wellness programs, emphasizing organizational, psychological, and ethical dimensions. The framework outlines critical components such as principled data acquisition, predictive modelling, human-in-the-loop interventions, ethical governance, and continuous evaluation. By synthesizing recent literature (2023–2025), this study highlights the importance of trust, autonomy, transparency, and fairness in implementing AI-driven mental health solutions. The proposed framework offers guidance for organizations, HR practitioners, and policymakers to design AI-enabled wellness initiatives that are both effective and ethically responsible. Recommendations for future empirical validation are discussed to facilitate iterative refinement and alignment with employee well-being objectives.**

***Index Terms*—Predictive AI, Employee Mental Health, Corporate Wellness, Organizational Trust, Ethical AI**

I. INTRODUCTION

Employee mental health is a growing concern worldwide, with workplace stress, burnout, anxiety, and depression increasingly impacting productivity, engagement, and organizational outcomes (Sadeghi, 2024; McKinsey, 2024). Traditional reactive interventions often fail to address emerging challenges promptly, highlighting the need for proactive and data-driven solutions. Predictive AI models offer a promising avenue by leveraging vast datasets to forecast potential psychological risks and facilitate timely, personalized interventions (Sun et al., 2025). However, the deployment of AI in workplace mental health carries profound organizational and psychological implications, including trust, autonomy, ethical concerns, and privacy considerations (Kawakami et al., 2023).

This paper aims to develop a comprehensive conceptual framework for applying predictive AI in corporate wellness initiatives, integrating organizational psychology principles, ethical safeguards, and practical implementation strategies. The framework focuses on organizational and psychological aspects rather than technical AI model development, offering a roadmap for responsible adoption in workplace contexts.

II. LITERATURE REVIEW

AI Applications in Workplace Mental Health (2023–2025)

Recent studies demonstrate that AI technologies can analyse employee behaviour, physiological signals, and self-reported well-being metrics to predict risks such as burnout, depression, and stress (Agarwal, 2025; Giuntella et al., 2025). For example, wearable sensors capturing sleep quality and heart rate variability, when integrated with digital activity data and survey responses, allow predictive algorithms to identify early indicators of psychological distress (Sun et al., 2025). Organizations adopting these AI-enabled monitoring tools have reported improvements in well-being program targeting and proactive interventions, though the studies emphasize voluntary participation and data privacy as essential prerequisites.

Ethical Considerations

Ethical deployment of predictive AI in mental health involves addressing data privacy, consent,

transparency, algorithmic fairness, and employee autonomy (Kawakami et al., 2023). Employees are sensitive to perceived surveillance, and misuse of predictive insights can lead to distrust and disengagement. Research underscores the importance of human-in-the-loop mechanisms, where AI supports decision-making rather than enforces punitive measures (Sadeghi, 2024). Ethical frameworks guide organizations to ensure that AI interventions enhance well-being without compromising employee rights.

Organizational Trust and Employee Perception

Trust emerges as a critical factor in the success of AI-driven wellness programs. Employees are more likely to engage positively when organizational communication emphasizes transparency, voluntary participation, and clear explanations of how AI predictions will be used (McKinsey, 2024). Managerial support and organizational culture play a vital role in shaping acceptance and perceived utility. Empirical studies suggest that employees experiencing supportive management and clear ethical policies report higher engagement with AI-assisted interventions and improved well-being outcomes (Unmind, 2025).

III. AI, WORKLOAD, AND PSYCHOLOGICAL RESOURCES

Predictive AI can help redistribute workload and optimize task allocation, reducing stress and freeing cognitive resources for proactive behaviours (Sun et al., 2025). By identifying early signs of burnout or workload imbalance, AI facilitates timely managerial interventions. However, studies also caution that overreliance on AI without employee consent or understanding can negatively affect psychological safety and autonomy, emphasizing the need for balanced implementation (Kawakami et al., 2023).

IV. METHODOLOGY

Conceptual Framework Development

This paper employs a conceptual methodology, synthesizing literature from 2023 to 2025 to construct a framework for integrating predictive AI into corporate wellness programs. The focus is on organizational and psychological aspects, ethical implementation, and practical applicability.

V. LITERATURE SYNTHESIS

Peer-reviewed articles, preprints, and organizational reports were systematically analysed to identify recurring themes, best practices, and gaps in AI-driven employee mental health interventions. Inclusion criteria emphasized studies on AI applications in workplace mental health, ethical considerations, organizational trust, and employee perceptions. Exclusion criteria eliminated studies without practical or psychological relevance.

VI. FRAMEWORK DESIGN

The proposed framework comprises five interrelated components:

1. Data Collection: Multimodal data acquisition through surveys, wearable devices, and organizational metrics, ensuring consent and minimal intrusion.
2. Predictive Modelling: AI algorithms detect patterns indicating potential mental health risks.
3. Human-in-the-Loop Interventions: AI insights inform supportive interventions such as counselling, coaching, and workload adjustments.
4. Ethical Governance: Policies ensure transparency, privacy, fairness, and employee autonomy.
5. Continuous Evaluation: Ongoing assessment of AI accuracy, effectiveness of interventions, and employee perceptions.

VII. EVALUATION AND VALIDATION PROPOSAL

Future empirical studies are recommended to validate framework components, test model performance in diverse organizational contexts, and assess psychological impacts on employees. Mixed-method approaches combining surveys, interviews, and behavioural data can provide comprehensive insights.

VIII. CONCEPTUAL FRAMEWORK

The framework is illustrated below (Figure 1). It represents the flow from data acquisition through AI analysis to human-in-the-loop interventions, embedded within an ethical governance structure.

[Insert Conceptual Framework Diagram here]

Table 1: Summary of Framework Components and Key Organizational/Psychological Considerations

Component	Description	Organizational / Psychological Implications
Data Collection	Multimodal, consent-driven	Trust, privacy, minimal intrusion
Predictive Modelling	AI identifies risk patterns	Accuracy, fairness, predictive reliability
Human-in-the-Loop Interventions	Supportive actions	Psychological safety, engagement, autonomy
Ethical Governance	Policies for data and AI use	Transparency, fairness, trust
Continuous Evaluation	Monitor impact and refine	Continuous improvement, employee feedback

IX. DISCUSSION

Benefits of Predictive AI in Workplace Mental Health
Predictive AI enables proactive interventions, early identification of risks, personalized support, and data-driven organizational decisions. When implemented ethically, AI enhances employee well-being, reduces absenteeism, and improves overall productivity (Giuntella et al., 2025).

Ethical, Privacy, and Autonomy Considerations
Ethical deployment ensures data privacy, voluntary participation, transparency, and fairness. Algorithmic audits are necessary to prevent bias and ensure equitable outcomes. Employees must retain agency over their data, fostering trust and engagement (Kawakami et al., 2023).

Organizational and Psychological Implications
Managerial support and organizational culture are critical. Leaders must communicate AI purposes clearly, integrate human oversight, and provide training to interpret AI outputs. Psychological safety is preserved when AI assists rather than controls interventions, mitigating stress and promoting positive perception (Sadeghi, 2024; Unmind, 2025).

Practical Applications
AI-driven wellness programs can include: real-time stress monitoring, adaptive workload allocation, personalized counselling, and automated alerts for high-risk scenarios. Organizations can integrate these systems with HR policies, wellness programs, and employee assistance initiatives to enhance uptake and efficacy.

Limitations and Future Research
The framework is conceptual and requires empirical validation. Future studies should examine cross-cultural applicability, industry-specific adaptations, long-term impacts on employee well-being, and potential unintended consequences of predictive AI in workplaces.

X. CONCLUSION

Predictive AI offers significant potential for enhancing employee mental health through proactive, data-driven interventions. A structured, ethically guided framework ensures organizational alignment, psychological safety, and trust. By integrating human-in-the-loop mechanisms, ethical governance, and continuous evaluation, organizations can implement AI-enabled wellness programs that are effective, responsible, and sustainable. Future empirical research is essential to validate the framework and optimize AI interventions across diverse workplace contexts.

REFERENCES

[1] Agarwal, H. (2025). Artificial Intelligence in Employee Well-Being and Human Resource Management. OPJU Business Review, 4(1), 91-101.

[2] Giuntella, O., Hyde, K., Saccardo, S., & Sadoff, S. (2025). Artificial intelligence and the wellbeing of workers. Scientific Reports, 15(1), 1–10. https://doi.org/10.1038/s41598-025-98241-3

[3] Kawakami, A., Chowdhary, S., Iqbal, S. T., Liao, Q. V., Olteanu, A., & Suh, J. (2023). Sensing Wellbeing in the Workplace, Why and For Whom? arXiv. https://arxiv.org/abs/2303.06794

[4] McKinsey & Company. (2024). Superagency in the workplace: Empowering people to unlock AI's full potential at work. https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/superagency-in-the-workplace