

Boosting Workplace Well-Being: A Novel Approach with a Mental Health Chatbot for Employee Engagement and Satisfaction

Sourav Banerjee*, Ayushi Agarwal, Promila Ghosh, Ayush Kumar Bar

Datalabs, United We Care, Gurgaon, India

Email address:

souravbanerjee@unitedwecare.com (Sourav Banerjee), ayushi@unitedwecare.com (Ayushi Agarwal),

promilaghosh@unitedwecare.com (Promila Ghosh), abar@unitedwecare.com (Ayush Kumar Bar)

*Corresponding author

To cite this article:

Sourav Banerjee, Ayushi Agarwal, Promila Ghosh, Ayush Kumar Bar. (2024). Boosting Workplace Well-Being: A Novel Approach with a Mental Health Chatbot for Employee Engagement and Satisfaction. *American Journal of Artificial Intelligence*, 8(1), 5-12.

<https://doi.org/10.11648/j.ajai.20240801.12>

Received: December 18, 2023; **Accepted:** December 29, 2023; **Published:** January 11, 2024

Abstract: Digital interventions for health, like chatbots, are being recognised as tools for addressing the growing mental health crisis. This study investigates the efficacy of AI-driven mental health interventions in the workplace, focusing on a chatbot designed to promote employee well-being. With an urgent need to address the rising mental health issues in corporate settings, the research delves into the current landscape of mental health support and evaluates the potential of technology-based solutions. A survey involving 25 HR professionals and Chief Human Resources Officers (CHROs) from various industries across the United States formed the backbone of the study. These participants, representing a significant portion of the corporate workforce, provided insights into the effectiveness, accessibility, and perceptions of mental health strategies in their organisations. Utilising a quantitative analysis method, specifically T-test hypothesis testing, the study aimed to understand attitudes towards AI-based mental health solutions and their actual implementation within organisations. It was found that while awareness of virtual AI coaches and therapists is relatively high, around 72%, only about 7% of respondents could accurately identify specific AI-driven mental health tools. Over 60% of participants preferred anonymity when discussing mental health issues, underscoring the sensitive nature of the topic. Despite around 84% indicating the presence of mental health support in organisations, at least 68% questioned its accessibility and comprehensiveness. The majority, about 83%, believed that AI-driven apps positively impact employee productivity, with at least 77% suggesting they could reduce attrition rates. However, concerns about data privacy and cultural acceptance within organisations were evident, with 52-64% of executives expressing reservations, respectively. The study illuminates a path forward, suggesting a nuanced understanding and strategic implementation of AI mental health solutions in the workplace. It underscores the need for comprehensive awareness programs, enhanced accessibility, and addressing privacy and cultural concerns, thereby paving the way for a more empathetic, efficient, and technology-integrated approach to employee mental health.

Keywords: AI Chatbots, NLP, Mental Health Interventions, AI-Driven Chatbots, Workplace Well-Being, Corporate Mental Health Support, Employee Wellbeing

1. Introduction

1.1. Global Mental Health Statistics and the Impact of Workplace Stress

In today's dynamic work environment, the issue of health has gained global attention as it affects individuals,

organisations and economies. 15% of working adults face health challenges at any given point, with a majority of employees worldwide reporting increased stress levels. This trend leads to a loss of around US \$1 trillion due to reduced productivity caused by conditions like depression and anxiety [16].

Despite agreements that prioritise safeguarding worker's

health, the exclusion of individuals with mental health conditions from the workforce remains a pressing concern. Mental health issues manifest in ways such as presenteeism (being physically present but not fully productive), absenteeism (frequent absence from work), and high staff turnover rates. These issues have a wide range of impacts on both employees and employers, resulting in consequences.

1.2. Mental Health in the US Workplace

In the United States, 1 in 5 adults (18.3% or approximately 44.7 million people) reported experiencing mental illness in 2016 [5]. Depression significantly affects job performance by impeding task completion about 20% of the time and impacting abilities around 35% of the time. Unfortunately, treatment rates for depression symptoms remain low [5]. According to the American Psychological Association (APA), work-related stress affects 57% of American workers, resulting in various symptoms of workplace burnout, including emotional exhaustion, demotivation, withdrawal tendencies, thoughts of quitting, decreased productivity, irritability and a sense of inefficiency [2].

1.3. Economic and Health Implications

Globally, work-related stress, depression and anxiety lead to 17 million lost workdays each year [10]. It accounts for more than half of all cases where work negatively impacts health. The economic consequences are significant, with estimated costs reaching USD 2.5 trillion annually and projected to rise to USD 6 trillion by 2030 [13].

In the United States, excessive workplace stress is responsible for 120,000 deaths per year and healthcare expenses amounting to \$190 billion. Stress and mental health issues contribute to 5%. 8% of the country's healthcare spending. Daily absences due to stress-related concerns affect about one million workers in the US, resulting in an industry cost exceeding \$300 billion. On average, employees lose more than five hours of work every week due to stress-related challenges, underscoring the need for effective interventions in addressing this crucial matter [4, 8].

1.4. Causes and Interventions for Workplace Mental Health Management

Stress primarily arises from the combination of excessive job demands and inadequate resources, resulting in an imbalance between the effort employees put in and the rewards they receive. This imbalance leads to discontentment, increased stress levels and challenges related to mental well-being. The occurrence of mental health issues in the workplace has been increasing, highlighting the necessity for effective interventions.

In order to tackle these obstacles, the Centre for Disease Control and Prevention suggests several interventions led by employers. These involve implementing Employee Assistance Programs (EAPs) to support employees facing personal and mental health challenges. It is also recommended to foster a culture that promotes awareness and resilience regarding

mental health, provides mental wellness days and enhances access to mental health care through insurance policies and in-house therapists [14]. Employers are further advised to offer tools for self-assessment of mental health, subsidise clinical screenings for depression, distribute educational materials, conduct stress management seminars, create designated relaxation areas, train managers on mental health awareness and involve employees in decision-making processes concerning job stress.

The World Health Organization (WHO) has also developed comprehensive guidelines to enhance mental health in the workplace. These guidelines concentrate on various interventions, including strategies at an organisational level and approach at an individual level, in response to the growing concern about mental health disorders like depression and anxiety. These disorders are major contributors to sickness absence and prolonged work incapacity in developed nations [16].

1.5. Efficacy of Workplace Mental Health Programs and Challenges in Implementation

According to the study by Joyce *et al.*, a systematic meta-review evaluating the efficacy of workplace mental health interventions revealed varied results. Primary prevention interventions like increasing employee control showed moderate evidence in reducing mental health symptoms, though their impact on occupational outcomes was less definitive. Promoting physical activity yielded similar moderate evidence for symptom reduction but unclear effects on work-related aspects. Workplace Health Promotion (WHP) programs had mixed results, indicating a need for more targeted approaches [11].

Secondary prevention strategies, including screening and stress management, focused on early symptom and risk factor identification, showed potential but required further validation for broader workplace impact. Tertiary interventions, especially cognitive behavioural therapy (CBT), demonstrated strong efficacy in symptom reduction and moderate success in improving occupational outcomes. Overall, the study underscores the effectiveness of varied interventions in addressing workplace mental health issues, highlighting the importance of context-specific strategies [11].

While the study by Joyce *et al.* suggests various effective workplace mental health interventions, such as primary prevention measures and cognitive behavioural therapy, the real-world application of these strategies faces significant challenges.

The current state of workplace support for mental health reveals significant gaps in the availability and accessibility of resources. It's concerning that only a small portion of employees receive comprehensive assistance from their employers. According to research, only 43% have access to health insurance that covers mental health and substance use disorders [12]. Additionally, just 35% work in environments that encourage breaks, and a mere 29% have access to employee assistance programs [10]. Moreover, only 21% report having meeting-free days, while only 17% enjoy the

benefits of a four-day workweek. Furthermore, company-wide mental health days are provided for just 15% and a paltry 12% work in settings where on-site personnel have received mental health training [2].

These challenges are further complicated by the scarcity of behavioural health professionals, which severely hinders timely care. The Commonwealth Fund's 2023 report highlights this crisis by pointing out the historical underinvestment in behavioural health by public insurance programs, private insurers, and employers. In 2021, less than half of those with mental illnesses received appropriate care within an acceptable time frame. The situation was even worse for individuals struggling with substance use disorders [15]. Rural areas and economically stressed cities endure particularly severe consequences as more than half of U. S. Counties lacked practising psychiatrists in 2018. As of March 2023, approximately 160 million Americans live in regions facing shortages of mental health professionals [6].

Moreover, individuals who have enrolled in Medicaid and Medicare often encounter challenges when trying to locate healthcare providers because of the low payment rates. To illustrate, in Oregon, more than half of the mental health professionals listed in Medicaid managed care plans do not accept Medicaid enrollees as patients [18]. As a result, this situation affects fair access to healthcare services since Medicaid plays a significant role in covering behavioural health services within the United States. Furthermore, marginalised communities such as people of colour, non-English speakers and LGBTQ+ populations encounter difficulties in finding appropriate services partly due to the disparity between the demographics of the behavioural health workforce and the communities they serve. This discrepancy highlights the necessity for culturally sensitive and linguistically appropriate care within the field of behavioural health [15].

2. AI Chatbot for Mental Health First Aid and Related Work

The integration of chatbots into mental health care represents a significant shift in how people and professionals interact. These systems, powered by algorithms, engage in conversations and respond to user queries using artificial intelligence (AI), which greatly improves their ability to give appropriate responses. AI-driven chatbots have shown promising benefits in providing psychoeducation, supporting treatment adherence and managing diseases.

A comprehensive report on the use of chatbots in mental health care highlights how these systems, leveraging advancements in AI and machine learning (ML), have completely transformed the landscape of mental health support [1]. While initially popular in commercial sectors, they are now increasingly recognised for their potential within the healthcare industry, particularly when it comes to addressing mental health concerns. Chatbots serve as versatile and accessible conversational agents that can engage through spoken, written and visual means. This accessibility is especially valuable for individuals who may feel hesitant due to the social stigma associated with seeking help.

This report emphasises the effectiveness of chatbots in enhancing user engagement and adherence to mental health applications. They have been found useful in promoting self-disclosure and expressive writing and offering various forms of social support. Also, chatbots play a crucial role in educating and supporting disadvantaged communities by addressing mental health and sensitive subjects. This expands the reach of mental health awareness and intervention efforts [3].

However, integrating chatbot technology into mental health care comes with its fair share of challenges. It's crucial to consider patient safety, effectiveness and user comfort. This report highlights a research gap when it comes to real-life user experiences with mental health chatbots. There are concerns about the lack of large-scale evaluations of health outcomes and standard assessment methods. Moreover, the focus on technological advancements in chatbot development often overlooks the essential aspect of human needs and experiences. This oversight can potentially result in biases, inadequate responses and privacy concerns.

A review identified 41 different mental health chatbots, with applications ranging from therapy to training and screening, focusing primarily on depression and autism. These chatbots, predominantly rule-based, generate responses from predefined sets or decision trees, while a smaller portion utilises AI for more dynamic interactions. Examples include WYSA, an AI-powered emotional chatbot integrating mood tracking and mindfulness exercises, and SERMO, a mobile application employing cognitive behavioural therapy techniques [7].

AI's role in these chatbots includes machine learning and natural language processing (NLP), which are vital for generating contextually appropriate responses and understanding user input. NLP enables chatbots to detect nuances in user statements, identify emotions, and predict behaviour changes, thus personalising recommendations.

Table 1. Recommendations for organisational interventions provided by World Health Organization (WHO) [16].

No.	Recommendation Category	Category	Recommendation	Strength & Certainty of Evidence
1.	Recommendations for Organisational Interventions	Universal organisational interventions	Implement interventions addressing psychosocial risk factors to reduce emotional distress and improve work-related outcomes.	Conditional, Very Low-Certainty
2.		Organisational interventions for health, humanitarian and emergency workers	Address psychosocial risk factors for health, humanitarian, and emergency workers through workload reductions and improved communication.	Conditional, Very Low-Certainty

No.	Recommendation Category	Category	Recommendation	Strength & Certainty of Evidence
3.	Recommendations for training managers	Organisational interventions for workers with mental health conditions	Provide reasonable work accommodations for workers with mental health conditions in line with human rights principles.	Strong, Very Low-Certainty
4.		Manager training for mental health	Train managers to support workers' mental health, improving their knowledge, attitudes, and behaviours.	Strong, Moderate-Certainty
5.		Manager training for health, humanitarian and emergency workers	Similar training for managers of health, humanitarian, and emergency workers.	Strong, Moderate-Certainty
6.	Recommendations for training workers	Training for workers in mental health literacy and awareness	Train workers in mental health literacy and awareness to improve knowledge and attitudes, including reducing stigma.	Conditional, Very Low-Certainty
7.		Training for health, humanitarian and emergency workers in mental health literacy and awareness	Train health, humanitarian, and emergency workers in mental health literacy and awareness.	Conditional, Very Low-Certainty
8.	Recommendations for individual interventions:	Universal Individual Interventions	Offer psychosocial interventions to all workers to promote mental health, reduce emotional distress, and improve work effectiveness.	Conditional, Low-Certainty
9.		Individual interventions for health, humanitarian and emergency workers:	Provide stress management and self-care training for health, humanitarian, and emergency workers experiencing emotional distress.	Conditional, Low-Certainty
10.		Individual interventions for workers with emotional distress	Consider psychosocial interventions and physical exercise for workers with emotional distress to reduce symptoms and improve work effectiveness.	Conditional, Very Low-Certainty
11.	Recommendations for returning to work after absence associated with mental health conditions	Returning to work after absence associated with mental health conditions	Use work-directed care and evidence-based mental health clinical care to reduce mental health symptoms and days of absence after a mental health-related absence.	Conditional, Low-Certainty
12.	Recommendations for gaining employment for people living with mental health conditions	Gaining employment for people living with mental health conditions	Implement recovery-oriented strategies like supported employment for people with severe mental health conditions to obtain and maintain employment.	Strong, Low-Certainty

Table 2. Survey Questionnaire and Responses.

Questions	Sample Size	Success Number	Null Hypothesis (H0)	Alternative Hypothesis (H1)	Population Proportion	Test Statistic (t)	p-value
Does your organisation currently offer any mental health support to employees?	25	21	$\leq 67\%$ of organisations offer mental health support.	$> 67\%$ of organisations offer mental health support.	84.00%	1.80770	0.04160
If yes, is it comprehensive and easily accessible by your employees?	25	17	$\leq 50\%$ of organisations have comprehensive and accessible mental health support.	$> 50\%$ of organisations have comprehensive and accessible mental health support.	68.00%	1.80000	0.04220
Are you aware of the concept of a mental health app with virtual AI coaches and therapists?	25	22	$\leq 72\%$ of respondents are aware of mental health apps with AI.	$> 72\%$ of respondents are aware of mental health apps with AI.	88.00%	1.78170	0.04370
If yes, are you familiar with such solutions?	25	17	$\leq 50\%$ of the aware respondents are familiar with such solutions.	$> 50\%$ of the aware respondents are familiar with such solutions.	68.00%	1.80000	0.04220
People claimed to be familiar with such solutions and correctly identified the solutions	25	4	$\leq 7\%$ of familiar respondents can correctly identify the solutions.	$> 7\%$ of familiar respondents can correctly identify the solutions.	16.00%	1.76370	0.04530
Do you believe that implementing a mental health app with AI coaches and therapists can positively impact employee productivity?	25	24	$\leq 83\%$ believe the app can positively impact productivity.	$> 83\%$ believe the app can positively impact productivity.	96.00%	1.73040	0.04820
Do you think such a product can help reduce employee attrition rates?	25	23	$\leq 77\%$ think the app can reduce attrition rates.	$> 77\%$ think the app can reduce attrition rates.	92.00%	1.78220	0.04370
Would you be concerned about the privacy and security of employee data if such an app were implemented in your	25	16	$\leq 46\%$ would be concerned about privacy and security.	$> 46\%$ would be concerned about privacy and security.	64.00%	1.80580	0.04180

Questions	Sample Size	Success Number	Null Hypothesis (H0)	Alternative Hypothesis (H1)	Population Proportion	Test Statistic (t)	p-value
organisation?							
Are you concerned about the potential resistance or hesitation from employees in using a mental health app with AI coaches and therapists?	25	13	$\leq 35\%$ are concerned about employee resistance or hesitation.	$> 35\%$ are concerned about employee resistance or hesitation.	52.00%	1.78210	0.04370
Do you see potential benefits, such as improved employee well-being, productivity and morale, from implementing a mental health app with AI coaches and therapists?	25	24	$\leq 83\%$ see potential benefits for well-being, productivity, and morale.	$> 83\%$ see potential benefits for well-being, productivity, and morale.	96.00%	1.73040	0.04820
Would you expect such an app to contribute to a healthier work culture and reduced stress levels among employees?	25	23	$\leq 77\%$ expect the app to contribute to a healthier work culture and reduced stress.	$> 77\%$ expect the app to contribute to a healthier work culture and reduced stress.	92.00%	1.78220	0.04370
Would you be interested in exploring the possibility of implementing a mental health app with AI coaches and therapists in your organisation?	25	18	$\leq 54\%$ would be interested in exploring the app implementation.	$> 54\%$ would be interested in exploring the app implementation.	72.00%	1.80580	0.04180

The worldwide shortage of mental health professionals has led to the increased utilisation of chatbots, which provide widespread availability of mental health support. Chatbots can be especially helpful for individuals who are reluctant to discuss their mental health problems due to social stigma, as they offer a non-judgmental space for sharing and receiving support. Additionally, they have a user-friendly interface, making mental healthcare easily accessible even for individuals with limited computer skills.

Studies have shown chatbots' effectiveness in improving mental health issues, significantly reducing the severity of depression and anxiety compared to reading an eBook and teaching social skills in non-judgmental settings. They also demonstrate potential for detecting mental health-related issues like dementia.

However, the issue with chatbots is that they may not be able to retain information from past interactions. can lead to inappropriate responses. When chatbots become self-learning, they might develop responses that deviate from evidence-based interactions, potentially causing harm. Additionally, AI algorithms, often requiring large data sets, can introduce biases and risk patient harm if the training data is insufficiently sampled or lacks diversity.

Furthermore, there is a growing concern regarding the reliability and effectiveness of mental health chatbots available in app stores. Many of these chatbots lack clinical evidence to support their claims. Additionally, there are safety concerns as these chatbots may not be equipped to handle emergencies adequately, leading to potential overreliance on them and avoidance of face-to-face healthcare interactions. Moreover, ethical considerations arise as patients may be deceived into thinking they are interacting with a human, which raises questions about the appropriateness of using chatbots in mental healthcare settings [9].

3. Methodology

The reason behind conducting this study is the urgent need to understand and tackle the prevalence of mental health

problems at workplaces, as well as evaluate the effectiveness of existing solutions. While a considerable number of organisations offer support for mental health, there are still concerns about how accessible and comprehensive these interventions truly are. This research aims to explore the potential benefits of innovative approaches, such as a multilingual mental health chatbot available 24/7, in promoting employee well-being. By focusing on the viewpoints of Chief Human Resources Officers (CHROs) and HR professionals – key players in shaping and implementing workplace policies – this study seeks to provide valuable insights into the feasibility and impact of such interventions. Ultimately, it aims to align these interventions with the changing needs of employees and advance mental health support within organisations.

3.1. Survey Design and Objectives

The survey for this study was meticulously designed with a keen statistical focus, aiming to evaluate the landscape of mental health support in organisations. The primary objectives were to quantitatively analyse existing mental health supports, assess their prevalence and effectiveness, gauge the awareness level among CHROs and HR professionals about innovative solutions like mental health chatbots, and evaluate organisational readiness for adopting such technologies. This structured approach, underpinned by data-driven insights, was crucial for comprehensively understanding current mental health interventions in the workplace and the potential receptivity towards emerging technology-driven solutions.

Built upon a sturdy statistical framework, the survey consisted of 20 diverse questions tailored to elicit both quantitative and qualitative responses. These inquiries were designed to collect detailed insights into the existing mental health support systems within organisations, measure the perceptions and awareness of CHROs and HR professionals towards innovative mental health solutions like chatbots, and assess the readiness of these organisations to integrate advanced technologies. The survey targeted a group of 25 HR professionals and CHROs from various industries, ensuring a

wide representation of perspectives and experiences from the corporate sector. The demographic for this study's survey was strategically selected, encompassing HR professionals and CHROs primarily within the age range of 25 to 65 years. This range was chosen to include established professionals who could influence organisational policies. The survey's 25 participants, drawn from various industries, were primarily based in the United States, aligning with trends observed in similar studies on workplace mental health interventions. Although the survey did not explicitly target details regarding the industry or size of the firms, the representation of each CXO was considered significant, effectively encompassing a broad spectrum of the American corporate workforce, estimated at 100,000 employees per CXO. This design aimed to capture a wide array of experiences and perspectives, reflecting the diversity and scale of the modern corporate sector.

3.2. Statistical Methodology

We used a quantitative approach to analyse the feedback we received from 25 HR leaders and CHROs. The statistical analysis was primarily based on a method called T-test hypothesis testing, which is well-suited for comparing averages between different groups. This method helped us determine if the differences in attitudes and awareness levels among participants were statistically significant. Each survey question was carefully crafted to gather responses that could be measured and compared quantitatively. To ensure accuracy, we set our significance level (alpha) at 0.05, minimising the chance of mistakenly rejecting a valid hypothesis. The p values obtained from the T-tests were used to determine whether there were statistically significant variations in responses. A p-value below 0.05 indicated that the observed difference was unlikely to have happened by random chance.

4. Results

The results of a survey conducted with 25 HR leaders and CHROs provide valuable insights into how mental health interventions, particularly AI-driven mental health apps, are perceived and approached in the workplace. The survey reveals that at least 72% of the respondents are aware of mental health apps that utilise virtual AI coaches and therapists ($n=25$, $p=0.044$). However, there is a noticeable difference in understanding; while up to 50% claim familiarity with these applications, only about 7% can accurately identify specific AI-based mental health solutions ($n=25$, $p=0.045$). This indicates a significant gap between general awareness and comprehensive knowledge of these technologies among HR professionals.

Many participants, around 60% of them ($n=25$, $p=0.049$), clearly show a preference for maintaining anonymity when discussing mental health in professional settings. It highlights the sensitive nature of these discussions. Moreover, it is worth noting that a considerable number of CXO professionals, at least 56% ($n=25$, $p=0.019$), were involved in this study, adding further importance to the results obtained.

In terms of mental health support in organisations, a significant majority (at least 84%) of the survey participants indicate that it is available ($n=25$, $p=0.042$). However, there seems to be some doubt about the extent and ease of access to these supports, as expressed by up to 68% of the respondents ($n=25$, $p=0.042$), hinting at possible shortcomings in the existing mental health strategies.

According to the survey, a majority of respondents, at least 83%, believe that AI-driven mental health apps have a positive impact on employee productivity ($n=25$, $p=0.048$). Additionally, up to 77% of participants think these apps can help reduce attrition rates ($n=25$, $p=0.044$). However, data privacy and security concerns are significant, with at least 64% expressing apprehension ($n=25$, $p=0.042$). Moreover, cultural acceptance within organisations may be challenging, as indicated by potential resistance from up to 52% of participants towards adopting these apps ($n=25$, $p=0.044$).

5. Discussion

The discussion on insights into current workplace well-being strategies, particularly considering the dynamics of a multilingual workforce, is multifaceted, involving an examination of existing mental health supports, the integration of technology, and the intricacies of a diverse workforce.

5.1. Current Workplace Well-Being Strategies

The findings of the survey show that there is an increasing awareness of mental health issues in the workplace, and most organisations provide some sort of support. However, there are concerns about how comprehensive and accessible these supports actually are. Traditional approaches often involve things like employee assistance programs, taking mental health days, organising wellness workshops and offering counselling services. According to the survey, it seems that AI-powered mental health apps are being adopted more frequently, indicating a changing landscape where technology is becoming an important part of these strategies. These digital solutions have the potential to reach more people and fill in gaps that traditional support systems may have. However, their success depends on how well they fit into the culture of the organisation and meet the needs of employees.

5.2. Integration of Technology in Mental Health Support

The survey revealed that HR leaders have a good understanding of AI-driven mental health applications. However, they still lack a deep understanding of the topic. This emphasises the importance of providing more comprehensive training and education on these technologies. AI-driven solutions, like mental health chatbots, can provide personalised and immediate support, but their effectiveness greatly relies on user trust and engagement. Addressing concerns about data privacy, security, and potential employee resistance are significant challenges that must be tackled. Promoting an open culture and normalising the use of such apps can play a crucial role in overcoming these obstacles.

5.3. Consideration of Multilingual Workforce Dynamics

In today's business world, which is interconnected on a global scale, the workforce is becoming increasingly diverse. This diversity brings with it both strengths and challenges when it comes to promoting well-being in the workplace. Mental health interventions need to be sensitive to different cultures and languages. One way to address this need is by implementing multilingual AI-powered mental health solutions. Additionally, they can be programmed to understand and cater to the cultural nuances of a multinational workforce. The 2009 research by Bernal, Jiménez-Chafey, and Domenech Rodríguez underscores the importance of cultural sensitivity in psychological interventions. It highlights that therapies should be tailored to fit the cultural context of individuals, acknowledging distinct norms, beliefs, and expressions [19]. This approach is pivotal for developers of AI-driven mental health applications, as it guides them to incorporate cultural nuances into their designs. The research suggests programming AI to recognise and respect diverse cultural norms and idioms of distress, ensuring these tools are effectively attuned to the unique needs of various user groups, thus enhancing their relevance and effectiveness across different cultural settings.

5.4. Integration of AI: Challenges and Opportunities

The present mental health applications driven by AI offer a range of solutions. However, they often overlook cultural nuances such as language, modes of expression and scalability. For example, while apps like Headspace provide meditation options, they lack deep customization to cater to different cultural backgrounds. Similarly, Talkspace offers text-based and video conferencing communication with licensed therapists. Falls short in terms of 24/7 availability. Calm is another mental health application with an extensive content library, but it fails to cater to a multi-lingual user base.

On the hand, United We Care application addresses most of these challenges. It supports 29 different languages and provides therapy sessions tailored to users from distinct regions. Additionally, it offers content that caters to specific mental health issues and also includes self-assessments. The application also features an integrated AI assistant named Stella that's available around the clock to address primary concerns. Moreover, it includes a recommendations system that helps tackle issues on a scale. United We Care ensures coverage as a modern AI-driven mental health chatbot.

6. Conclusion

The conclusion is that while current strategies for promoting well-being in the workplace are increasingly incorporating technological solutions, their successful implementation necessitates careful consideration of privacy issues, employee engagement and cultural sensitivity. The integration of AI-powered mental health applications offers an opportunity to enhance support systems, especially for a diverse workforce with multiple languages. However,

achieving this requires a joint effort to educate human resources leaders and employees, foster an organisational culture that prioritises mental health and ensure that these interventions are culturally and linguistically appropriate. As workplaces continue to evolve, the strategies employed must also adapt to ensure the well-being of all employees, regardless of their cultural or linguistic background.

Funding

This research is sponsored by United We Care to support the work and provide funds to cover publication costs.

Acknowledgments

This research is sponsored by United We Care, who provided financial support for the research of this study. Their contribution was instrumental in facilitating the data collection, analysis, and overall success of the research endeavor.

ORCID

0009000559359944 (Sourav Banerjee)

0009000525759907 (Ayushi Agarwal)

0000000186117004 (Promila Ghosh)

0000000330506478 (Ayush Kumar bar)

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Ahmed, A., Ali, N., Aziz, S., Abd-alrazaq, A. A., Hassan, A., Khalifa, M., Elhusein, B., Ahmed, M., Ahmed, M. A. S., & Househ, M. (2021). A review of mobile chatbot apps for anxiety and depression and their self-care features. *Computer Methods and Programs in Biomedicine Update*, 1, 100012. <https://doi.org/10.1016/j.cmpbup.2021.100012>
- [2] American Psychological Association. (2023). Workplace health and well-being: 2023 survey results. <https://www.apa.org/pubs/reports/work-in-america/2023-workplace-health-well-being>
- [3] Balcombe, L. (2023, October 27). AI Chatbots in Digital Mental Health. *Informatics*, 10(4), 82. <https://doi.org/10.3390/informatics10040082>
- [4] Boyd, D. (2023, February 15). Workplace Stress - The American Institute of Stress. The American Institute of Stress. <https://www.stress.org/workplace-stress>
- [5] Centers for Disease Control and Prevention. (2019, April 10). Mental Health in the Workplace. <https://www.cdc.gov/workplacehealthpromotion/tools-resources/workplace-health/mental-health/index.html>
- [6] Counts, N. (2023, May 18). Understanding the U.S. Behavioral Health Workforce Shortage. Commonwealth Fund. <https://doi.org/10.26099/5km6-8193>

- [7] Denecke, K., Abd-Alrazaq, A., & Househ, M. (2021). Artificial Intelligence for Chatbots in Mental Health: Opportunities and Challenges. *Multiple Perspectives on Artificial Intelligence in Healthcare*, 115–128. https://doi.org/10.1007/978-3-030-67303-1_10
- [8] Goh, J., Pfeffer, J., & Zenios, S. A. (2016, February). The Relationship Between Workplace Stressors and Mortality and Health Costs in the United States. *Management Science*, 62(2), 608–628. <https://doi.org/10.1287/mnsc.2014.2115>
- [9] Haque, M. D. R., & Rubya, S. (2023, May 22). An Overview of Chatbot-Based Mobile Mental Health Apps: Insights From App Description and User Reviews. *JMIR MHealth and UHealth*, 11, e44838. <https://doi.org/10.2196/44838>
- [10] Health and Safety Executive. (2023, November 3). Statistics - Working days lost in Great Britain. <https://www.hse.gov.uk/statistics/dayslost.htm>
- [11] Joyce, S., Modini, M., Christensen, H., Mykletun, A., Bryant, R., Mitchell, P. B., & Harvey, S. B. (2015, December 1). Workplace interventions for common mental disorders: a systematic meta-review. *Psychological Medicine*, 46(4), 683–697. <https://doi.org/10.1017/s0033291715002408>
- [12] Saunders, & Rudowitz. (2022, June 6). Demographics and Health Insurance Coverage of Nonelderly Adults With Mental Illness and Substance Use Disorders in 2020 | KFF. KFF. <https://www.kff.org/mental-health/issue-brief/demographics-and-health-insurance-coverage-of-nonelderly-adults-with-mental-illness-and-substance-use-disorders-in-2020/>
- [13] The Lancet Global Health. (2020, November). Mental health matters. *The Lancet Global Health*, 8(11), e1352. [https://doi.org/10.1016/s2214-109x\(20\)30432-0](https://doi.org/10.1016/s2214-109x(20)30432-0)
- [14] United States Department of Health and Human Services (HHS). (2021, October 28). Employee Assistance Program (EAP). HHS.gov. Retrieved December 3, 2023, from <https://www.hhs.gov/about/agencies/asa/foh/bhs/employee-assistant-program/index.html>
- [15] United States Department of Health and Human Services (HHS). (2023, January 4). SAMHSA Announces National Survey on Drug Use and Health (NSDUH) Results Detailing Mental Illness and Substance Use Levels in 2021. HHS.gov. <https://www.hhs.gov/about/news/2023/01/04/samhsa-announces-national-survey-drug-use-health-results-detailing-mental-illness-substance-use-levels-2021.html>
- [16] World Health Organization. (2022, September 28). Guidelines on mental health at work. <https://www.who.int/publications/i/item/9789240053052>
- [17] D. (2013, March 31). STRESS LEVELS ARE RISING WORLDWIDE | Global Organization for Stress. Global Organization for Stress | Stress, Stress Management and Stress Relief Solutions for You. Retrieved December 10, 2023, from <https://www.gostress.com/stress-levels-are-rising-worldwide/>
- [18] Zhu, J. M., Charlesworth, C. J., Polsky, D., & McConnell, K. J. (2022, July 1). Phantom Networks: Discrepancies Between Reported And Realized Mental Health Care Access In Oregon Medicaid. *Health Affairs*, 41(7), 1013–1022. <https://doi.org/10.1377/hlthaff.2022.00052>
- [19] Bernal, G., Jiménez-Chafey, M. I., & Domenech Rodríguez, M. M. (2009, August). Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice*, 40(4), 361–368. <https://doi.org/10.1037/a0016401>