

Organizational Activities to Promote Health for Older Employees Using Smart Technology

Doc. dr. Anamarija Kejžar

Faculty of Social Work/University of Ljubljana
Ljubljana, Slovenia
anamarija.kejzar@fsd.uni-lj.si

Doc. Dr. Simon Colnar

School of Economics and
Business/University of Ljubljana Ljubljana, Slovenia
simon.colnar@ef.uni-lj.si

Abstract

This paper explores how organizations can promote active and healthy ageing among older employees by leveraging smart technologies and artificial intelligence (AI). As the workforce ages, ensuring the physical and mental well-being of older workers becomes crucial for maintaining productivity, intergenerational collaboration, and organizational resilience. Study, based on literature review examines the application of AI-powered tools, mobile apps, wearables, and digital reminders in health promotion programs, showing how these technologies support personalized wellness, behaviour change, and continuous engagement. Evidence suggests that digital interventions significantly improve physical activity, nutrition habits, and self-monitoring among older workers. However, successful implementation depends on supportive leadership, adequate resources, and addressing potential barriers such as digital stress, data privacy concerns, and scepticism about AI-driven solutions. These innovations contribute to workplace environments that support healthy ageing, reduce absenteeism, and enhance employee satisfaction. By adopting age-inclusive digital health promotion strategies, organizations can retain experienced workers, promote intergenerational trust, and ensure equitable access to health resources in a digital age.

Keywords

Digital inclusion, smart technologies, workplace health promotion, older employees, health promotion, active and healthy ageing

1 Active and healthy ageing in organization environment

Employees' well-being is crucial in productive and efficient execution of the organization's day-to-day operations. Businesses must make sure they provide activities that can assist people in pursuing a healthy lifestyle, as people are becoming more concerned about their health with each passing year [1]. As a result, having organizational initiatives that can successfully

support both mental and physical health can aid in attracting new talent and retain the current workforce members.

Workers can experience long hours and stressful periods, which can affect their performance and the company's results. Which is why it is of high importance to leverage health promotion programs and activities which can lead to reduced absenteeism, increased productivity and foster a positive work environment. Employees who have their health as a top priority are more likely to be engaged, motivated, and successful in helping the business succeed. Because of its advantages, promotion strategies can also make use of artificial intelligence (AI). AI tools can be used in different forms - of health apps, personalized wellness platforms, wearables, risk assessment platforms. In recent years, AI has been widely used in most business departments to help managers make decisions, generate ideas, and save time on repetitive tasks [2], but possibilities to use AI to promote health can be also used. Leveraging the power of data analysis and analytics, along with AI tools, companies can improve their performance and satisfy customers and employees better. AI-driven analytics can provide personalized wellness programs, virtual mental health support that can offer stress-reducing actions, and regular check-ups to ensure that the employees' well-being is regularly tracked. Programs should cater for all demographics groups but should be available in different formats.

Since older workers are an essential component of the organization process, the organization can focus more on them despite their increased risk of chronic illnesses and declining cognitive abilities [3]. Organizations can address promotion of health for older employees with different digital interventions which stimulate older employees not only to be more physically active, but also to use smart technology in everyday life.

1.1 Smart technology to promote active and healthy ageing

The World Health Organisation [4] defines healthy ageing as "the process of developing and maintaining the functional ability that enables wellbeing in older age." Functional ability is about having the capabilities that enable all people to be and do what they have reason to value. This includes a person's ability to: meet their basic needs; learn, grow and make decisions; be mobile; build and maintain relationships; and to contribute to society.

The risks for older workers are health and functional decline (like chronic conditions, slower physical recovery, musculoskeletal issues); cognitive challenges (like difficulty adapting to rapid technological changes) or psychosocial and

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

Information Society 2025, 6–10 October 2025, Ljubljana, Slovenia
© 2025 Copyright held by the owner/author(s).
<https://doi.org/10.70314/is.2025.digin.12>

mental health risks (burnout, isolation, ageism or anxiety about retirement).

In the previous decade, the use of Artificial Intelligence (AI) and Information and Communication Technology (ICT) has become prevalent in our lives. With the most known benefits of saving time and the ability to do repetitive tasks, allowing employees to focus more on creativity and strategizing, companies are implementing new emerging technologies. AI can have both a positive and a negative effect on the employees by using new technologies, however how can AI be used in promotional activities that companies can undertake in order to achieve better results?

AI and ICT are continuously used to communicate knowledge and encourage employees to become more physically active, more mindful and be socially more engaged. A metadata analysis has done research on how social networking sites (SNS) have an affect on mostly the following domains: physical health, sexual health, food safety, health promotion and smoking, which results have shown to be positive in way which the participants have shown changes in their behavior in order to improve their healthy lifestyle [5]. Additionally, studies have shown that programs that encourage active learning and participation have a greater impact on participants than those that only encourage passive learning. An organization has done an experiment where the experimental group went under a medical intervention where they had access to a website and participation in an health intervention, while the control group was just given a handbook, and the results were positively related for the experimental groups as the outcomes were higher scores in healthy nutrition, exercises and a decrease in their body mass index. This effectively has shown that a tailored program for the target audience has positively affected the participants' behavior and contributed to having a better healthy lifestyle with active and engaged learning methods. Another example of how new technologies can help individuals improve their well-being is making customized programs through an application. An application is accessible at any time and is highly portable, allowing for use anytime and anywhere. This enables the employees to track their active behavior outside of work and be more consistent with their goals. Studies have supported that the individuals who were using the application have achieved: greater physical activity by 63 minutes, greater weight loss, significantly improved knowledge score, better diet quality and consistency of maintaining their healthy lifestyle by 63% [6]. However, in many studies stress management is highly unrepresented, as they focus on other primary indicators for physical or mental health.

The application of ICT such as mobile apps, websites, SMS, and social media in promotion of healthy lifestyle, has shown that promotional activities that continuously communicate healthy behavior contributed mostly to physical activity and nutrition, while the reminders built in for consistency, has allowed employees to be more engaged and disciplined in their health related journey, however stress management, selfactualization and interpersonal relationships were not researched enough.

Mental health is vital to our well-being as well as a crucial factor in our private and professional life. Having a good state of mind and a healthy mind allows us to cope with challenges life throws at ourselves as well as how we live our life and the ability to progress in many areas in order to succeed and feel accomplished. People in general often feel stressed and

overwhelmed, however many also deal with mental disorders that hinder their day-to-day activities and in a lot of cases their relationships, physical health and professional achievements. Moreover, the environment that a person is working in is highly effective in the employees' mental health. If employees are not taken care of, they may develop unhealthy coping mechanics which can affect their work goals.

Organizations should recognize mental health in the workplace as a crucial part of the employees' success in the three suggested pillars. Companies should have a vision for a psychologically healthy workplace which shows that they recognize the importance of employees' mental health as it is responsible for their operational excellence and organization's success, strategies and policies for the employees on workplace and organizational level that will support prevention and support, and prevention and treatment services that will allow access for mental health care for the employees and their family.

1.2 Challenges in implementing active and healthy ageing with smart technology

Challenges may arise when implementing new organizational activities. One of the most frequent challenges of making a workplace health promotion program, is the hesitation of the employees to participate in those. In this matter, the importance of managers and their encouragement come to light. Studies have shown that employers' leadership style is essential in tackling this problem, as their encouragement to exchange knowledge, change their beliefs and increase their self-efficacy has shown to be the most influential factors in motivating employees to continuously participate in health promotion programs [7]. Furthermore, employees might believe that the organization prioritizes discussing health initiatives over improving their working conditions, which could be an obstacle to participation.

Other major issues that might be hindering progress include a shortage of personnel to run those programs and a lack of funding. Finding an adequate team leads to higher success of the organization, which is why the organization should invest in the right team to carefully curate the right elements of the promotional program, that can be done externally or internally through workshops, however, when it comes to the lack of funding if the organization cannot offer resources at that moment of time, assistance and support may be provided by health organizations, business organizations who offer wellness programs or voluntary staff [8]. On the other hand, the use of apps and smart technologies in the workplace can also make or increase digital stress. Studies have shown that digital stress due to rapid implementation of new technologies, has an impact on employees' job satisfaction, work-life balance, productivity and their performance, as intensified digital communication leads to psychological challenges that are linked to anxiety, depression or burnout [9]. Moreover, contributors to digital stress also relate to inability to distinguish and make boundaries between the employees' personal and professional lives, which can lead to feeling overwhelmed and exhausted.

2 Conclusion

The responsibility for active and healthy ageing is on each individual, but also on organization. The organization should focus on ways to promote the programs that are going to be most effective in order to reach all employees. Organizations are employing health promotion due to both its benefits for the employees and the organization itself; additionally, taking the risk of implementing AI-based technologies to achieve a greater effect. Using AI can be beneficial when it comes to promoting workplace health related programs [10], however employees may be hesitant in participating in or trusting the program. AI chatbots can be trained based on rulebased algorithms where the topics of physical, mental and social health will be covered as well as nutritional advice.

AI has been shown to be successful in this matter, as one study shows that they have effectively promoted healthy lifestyles, smoking cessation, treatment and reduction of substance abuse, all while providing a non-judgmental space [11]. This can be a good idea for the beginning; however, it is not recommended to fully trust it but track that advice with caution. On the other hand, the problem with data privacy arises, hence it is important for the organization to have their chatbot incorporated in their system so that private information will not be let out to the public. Consistent promotion of active and healthy ageing can also be done through an app, where the employees can access fitness programs tailored to them as well as topics related to mental health. An interesting aspect of this can be the gamification of certain elements. This can be a program where employees can connect with each other and foster healthy competition. Additionally, employees can gather points and achieve levels which can help them feel more accomplished and successful in which they will experience a dopamine hit. This will encourage them to continue in their fitness journey as they themselves can feel and see the progress that they have made. Another effective health promotion is building smart reminders in the employees' computer where they will be notified based on an algorithm for drinking water, taking a break, stretching or lunch time. Those reminders will notify the employees that they can take a short break to step back and ease their mind, with a relaxing activity, which can be flexible and each person can modify the settings according to their preferences [12]. Moreover, algorithms can be used to predict burnouts, based on how few employees take breaks and whether they are overworked.

Note that there is a section break at the end of references to balance the columns (and this text is a part of the new section). If you have no space left at the end of your paper, you can delete it.

With introducing and promoting smart technology in organization environment to promote active and healthy ageing we can introduce older employees to use smart technology, increase intergenerational collaboration and trust and take proactive approach in programmes for active and healthy ageing. But there must always be also place for social contacts – smart technology can not be replacement for social contacts, but our tool.

References

- [1] Zhenjing, G., Chupradit, S., Ku, K. Y., Nassani, A. A., & Haffar, M. (2022). Impact of Employees' workplace environment on Employees' performance: A Multi-Mediation Model. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.890400>
- [2] Abousaber, I., & Abdalla, H. (2023). Review of using technologies of Artificial intelligence in Companies. *International Journal of Communication Networks and Information Security (IJCNIS)*, 15(1), 217–228. <https://doi.org/10.17762/ijcnis.v15i1.5743>
- [3] Wikström, E., Arman, R., Dellve, L., & Gillberg, N. (2023). Mentoring programmes – building capacity for learning and retaining workers in the workplace. *Journal of Workplace Learning*, 35(8), 732–751. <https://doi.org/10.1108/jwl-01-2023-0003>
- [4] World Health Organization. (2021). *Decade of healthy ageing: baseline report*. World Health Organization, NY
- [5] Laranjo, L., Arguel, A., Neves, A. L., Gallagher, A. M., Kaplan, R., Mortimer, N., Mendes, G. A., & Lau, A. Y. S. (2014). The influence of social networking sites on health behavior change: a systematic review and metaanalysis. *Journal of the American Medical Informatics Association*, 22(1), 243–256. <https://doi.org/10.1136/amiajnl-2014-002841>
- [6] Naimark, J. S., Madar, Z., & Shahar, D. R. (2015). The impact of a WebBased app (eBalance) in promoting healthy Lifestyles: Randomized controlled trial. *Journal of Medical Internet Research*, 17(3), e56. <https://doi.org/10.2196/jmir.3682>
- [7] Saito, J., Odawara, M., Takahashi, H., Fujimori, M., Yaguchi-Saito, A., Inoue, M., Uchitomi, Y., & Shimazu, T. (2022). Barriers and facilitative factors in the implementation of workplace health promotion activities in small and medium-sized enterprises: a qualitative study. *Implementation Science Communications*, 3(1). <https://doi.org/10.1186/s43058-022-00268-4>
- [8] Birken, B. E., & Linnan, L. A. (2006). Implementation challenges in worksite health promotion programs. *North Carolina Medical Journal*, 67(6), 438–441. <https://doi.org/10.18043/nmc.67.6.438>
- [9] Gupta, P., Lakhera, G., Sharma, M., & Joshi, S. (2024). Digital Stress Effect on Employee quality of life: Overcoming barriers Towards Sustainable Development. *IEEE*, 1–6. <https://doi.org/10.1109/icrisst59181.2024.10921806>
- [10] Lange, M., Löwe, A., Kayser, I., & Schaller, A. (2024). Approaches for the Use of AI in Workplace Health Promotion and Prevention: Systematic Scoping Review. *JMIR AI*, 3(1), e53506.
- [11] Aggarwal, A., Tam, C. C., Wu, D., Li, X., & Qiao, S. (2023). Artificial Intelligence-Based Chatbots for Promoting Health Behavioral Changes: Systematic review. *Journal of Medical Internet Research*, 25, e40789. <https://doi.org/10.2196/40789>
- [12] Tampubolon, L. P. D., & Alvaro, G. (2024). The potential of Time Break Reminder program in digital work environments. *International Journal of Research Publications*, 142(1). <https://doi.org/10.47119/ijrp1001421220246022>