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CONFERENCE ABSTRACT

How do Employees Experience Digital Monitoring and Coaching to Better Cope with Their Pain: A Pilot Study with a Smartphone Application

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Background: Pain complaints are an important problem for employees, employers, and society. Up to 60% of the working population suffers from pain and these complaints are responsible for a third of all absenteeism. Pain is a complex phenomenon influenced by physical and psychosocial factors. Digital technologies such as smartphone applications offer opportunities to empower employees and help them manage and cope with their pain. However, lack of empirical evidence and user-friendly design hinder the adoption of these technologies in practice. This one group open label pilot aimed at evaluating the impact and user experience of an innovative smartphone application that includes monitoring as well as coaching to help employees manage their pain.

Methods: An extensive co-design process including 262 end-users and seven domain experts was used to develop an app that contains 1) a monitoring part with questionnaires and integration with an activity tracker and 2) a coaching part including online information and exercises to help improve pain-related cognitions and other pain-management skills. Afterwards, 66 employees (experiencing pain for at least six weeks) of a large Belgian hospital used the smartphone app for six months. Every six weeks, participants were asked to complete a standardized questionnaire measuring work expectations, pain-related perceptions, and pain behavior. Finally, 12 employees participated in a semi-structured interview to help understand the quantitative findings, evaluate the user experience, and formulate recommendations towards the use of pain-management apps for employees. Quantitative and qualitative analyses by means of SPSS (version 28.0.1.0) and NVivo (version 1.0) were conducted to test the hypotheses.

Results: Forty-eight participants had complaints, mostly located in the back (80%) and neck (74%), for at least one year. Only pain catastrophizing ($\chi 2=15.934$, $p = .001$) and fear avoidance ($\chi 2=8.934$, $p = .030$) were improved after using the app for six months. Participants experienced the app as useful and well elaborated. Based on the thematic analysis, seven recommendations emerged: 1) awareness and education about pain and pain perceptions stimulates behavior change, but make sure that the focus is on coping with pain and valued activities and not on the pain itself, 2) monitoring should be user friendly, accurate, and relevant, 3) the ability to explore and learn at your own pace is a must, 4) app functionalities should be attractive and provide maximal reward while requiring minimal effort from the user, 5) personalized and job-specific content is a must, 6) a blended approach, i.e. digital tools combined with human contact with a

professional expert, is recommended, and 7) integration within a broader well-being policy at work is required.

Conclusion: A smartphone application may help employees to monitor and cope with their pain at work. Provided that it meets some specific requirements: 1) an app is not used as a standalone but integrated within a broader wellbeing policy at work, 2) there is the possibility to interact with a professional, and 3) an app contains personal and job-specific recommendations tailored to the workplace and specific needs of the user.