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Feasibility of mobile mental wellness training for older adults

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ABSTRACT

Mobile technology has been increasingly adopted in promotion of mental health among older people. This study assessed the feasibility of a mobile mental wellness training application for individual use and for group work from the perspectives of older adults and social care professionals. The older individuals recruited for the study were participants in a Circle of Friends group and family caregivers' peer support group offered by the communal senior services. The qualitative and quantitative results of interviews, questionnaires, observation, and application usage were reported. Seven older adults started using the application independently at home in parallel with the group activity. This study revealed new information regarding the barriers to the older adults' full adoption of such mobile technologies. The results indicated that there may be potential in the incorporation of mobile technologies in promotion of mental health of older people at group settings.

Introduction

Mental health disorders, such as depression, are significant problems among older adults. The global prevalence of depression in older adults is estimated to be 5–20%, depending on cultural context.[1] According to World Health Organisation (WHO), unipolar depression occurs in 7% of the general older population and approximately 15% of adults aged 60 and over suffer from a mental disorder.[2] The global population is ageing rapidly and between 2015 and 2050, the proportion of the world's population over 60 years will nearly double, from 12% to 22%, and the mental health care resources will struggle to provide help and prevention for older adults suffering from depression. Mental health also has an impact on physical wellness and vice versa. Caring and preventing mental disorders is important also from the point of supporting independent living and functional capability of older adults. Prevalence of mental health disorders is twice as high among home care patients, according to some reports, even up to 62%.[3] The prevalence of mental health disorders has shown to be increasing and, for example in Finland, 11.5% of people aged 65 years or older were prescribed antidepressants (compared to 9.4% of people aged 25–64 years) in 2014.[4] Depression is highly correlated with loneliness,[5] and a similar proportion of Finnish persons aged 75 years or older felt alone either fairly often or all the time.[6] Depressive disorders are associated with greater morbidity and mortality in general, while subjective well-being is associated with the increased survival of older individuals.[7] Generally speaking, worldwide interest in the promotion of mental well-being has arisen as measurements of well-being have been adopted as key economic indicators alongside gross domestic product (GDP).[8]

Mobile health (mHealth) has been presented as a new frontier for the delivery of mental health treatment.[9] Mobile mental health or mental mHealth can be defined as the application of mobile phones to mental health practice. Advantages include interactivity, just-in-time delivery, low resource requirements, and portability.[10] The effects of mental health mobile apps on mental health have been

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evaluated.[11,12] The reviews concluded that mental health apps may be effective and improve the accessibility of treatment. However, many of the available mental health applications were not based on scientific evidence.[12]

The IMS Institute for Healthcare Informatics identified 712 mental health apps for Apple iOS and Google app platforms in 2015.[13] Due to the older population's lower use of information and communications technology (ICT) and the specific usability challenges that age-related changes pose,[14] adapting mHealth for seniors is not straightforward. However, the use of information technologies among older age groups is increasing. In Finland, 93% of the total population and 70% of the population aged 65–74 years have used the Internet within the previous 12 months.[15] Moreover, sixty-nine percent of the total population and 28% of the older population had used the Internet with a mobile device.[16] The mobile phone usage rate was nearly 90% in all age groups in 2013.[17] The ability to reach the most vulnerable population groups, such as older adults, is one of the five main categories of barriers that healthcare providers have listed regarding mHealth apps.[13]

Growing interest in mindfulness techniques that focus on paying intentional and non-judgemental attention in the present moment has resulted in growing number of mobile applications based on those techniques. Although some recent studies on their usefulness exist,[18,19] the evidence is scanty and more studies are needed.[20] There are no studies evaluating the feasibility of these applications for older populations. A web-based acceptance and commitment therapy (ACT)[21] intervention was found to be acceptable to clients and to have positive impact on depressive symptoms, psychological flexibility and mindfulness skills.[22] The study suggests that web based ACT-interventions are useful as an early-stage intervention. Oiva is a mobile mental wellness training application that is based on ACT,[21] and its exercises, including mindfulness techniques, are aimed at supporting the active learning of mental wellness skills and increasing psychological flexibility. The application can also be called "positive technology"[23] or defined as an example of mHealth 2.0.[24] The feasibility of the Oiva mobile application was demonstrated in a one-month field trial with 15 working-age participants.[19] The stress ratings of the participants decreased and life satisfaction scores increased significantly during the trial. The application showed good acceptability, usefulness, and engagement among the study participants. The applicability of the Oiva application was also evaluated by depression nurse specialist students in Finland.[25] The results implicate that the Oiva mobile application is a credible, feasible, and useful self-management tool, suitable for use in prevention and treatment of depression and other mental issues. The application seemed beneficial tool in treating mild to moderate symptoms, but only trained professionals should use it with patients who have severe problems such as psychosis or schizophrenia. However, before this study the feasibility of the Oiva application has not been tested among older adults.

The main focus of this pilot study was to assess the feasibility of a mobile mental wellness training application for older adults. The study investigated the usage, usability, acceptance, and usefulness of the application, and its impact on depressive symptoms and mindfulness skills of older adults. Furthermore, the aim was to assess the suitability of the application for group activity targeted for older adults.

Methods

Study design

This paper reports a descriptive study that combines qualitative and quantitative methods to examine the feasibility of a mobile mental wellness training application for older adults. A methodological triangulation, where multiple methods are used to study a single problem or phenomenon,[26] was used to investigate the usage, usability, acceptance, and usefulness of Oiva application. The reception and usage of the mental wellness training application was observed by non-participant observation method during the introductory session. The application was tested by older adults and health care professionals independently at home and as part of group activities. The independent use of the application was monitored by collecting application usage logs. In addition, questionnaires and semi-structured interviews were used to collect data. The study procedure is explained in more detail below.

This study was conducted as part of a larger population based Gamified remote service concept for promoting health of older people (GASEL) study that was aimed at deriving requirement specifications for a holistic well-being service for older adults. The Ethics Committee of Human Sciences at the University of Oulu (statement 6/2014) approved the GASEL study protocol. All participants received oral and written information about the study and signed informed consent forms.

Study participants

The older adults were recruited for this study from two groups: a Circle of Friends group and a peer support group for family caregivers. The groups were offered by the senior services of the City of Oulu and both were led by the same social instructor and occupational therapist.

The Circle of Friends group was based on the Circle of Friends model[27] with aim to prevent and alleviate loneliness among older adults, positively impact their quality of life, empower them, and increase their control over their lives. Subjective experience of one's own survival, loneliness, the need for help, and satisfaction with social relationships affected admittance to the group. In addition, the inclusion criteria for the Circle of Friends group was a score of six on the Geriatric Depression Scale (GDS-15),[28] a threshold commonly used to indicate depression in older adults.[29] The group was organized once a week for 12 weeks. Each session had a theme, e.g. mood or loneliness, that was selected by the group leaders based on participants' needs. The group had five participants, of whom four consented to this study.

The peer support group for family caregivers was targeted for older family caregivers, who took care of their family members daily. The main objective was to share experiences of daily life, feelings, information and guidance between peers. The group gathered once a week for three months. It had eight participants of whom three consented to this study. Thus, there were seven older adult participants in total and two health care professionals, i.e. the group leaders, who took part in this study.

Oiva application

Oiva is a stand-alone mobile application for mental wellness training designed cooperatively by experts in psychology, technology, and users. The application has four intervention paths with a total of 46 text and audio exercises and an introductory video for each path. The exercises comprise an ACT-based[21] intervention program with the following topics: "Aware Mind", "Wise Mind", "Values", and "Healthy Body". Each exercise lasts about 1–3 minutes and one can listen to it or read it as a text. The application suggests the order of the exercises, but the user is also free to follow an order of his or her choice. The user can also add his or her favourite exercises to a list, enabling quick access from the main view. A more detailed description of the functionalities and content has been published previously.[19] The application saves the date and time when it starts as well as information regarding the user's