

PREVENTING DEPRESSION THROUGH DIGITAL TOOLS. A QUALITATIVE STUDY AMONG ADULTS IN BRAŞOV

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Abstract: *This paper aimed to find out the opinions, perceptions and behaviour of Romanian adults regarding the prevention and treatment of mild mental disorders, i.e. depression. The focus was on the usage of digital tools for preventing mild depression, while investigating the acceptability of mHealth applications for this purpose. For this, a qualitative study, among Romanian adults, based on 2 focus groups was carried out. Data was analysed using the content analysis method. The outcomes are useful in determining the usefulness of mobile technology in the development of sustainable health policies, with emphasis on preventive interventions to promote coping and self-management skills among Romanians at risk of depression.*

Key words: *mental health, depression, qualitative research, technology, digital tools.*

1. Introduction

In recent years, especially following the economic crisis of 2007-2008, the interest in mental health and medical services has intensified at both European and national level. Given the growing external migration, but also the recent socio-economic context, the emphasis on promoting mental health and wellbeing and the prevention of mental health disorders campaigns have made sense (Suciu et al., 2012).

Currently, the policy of the Ministry of Health seeks to improve the population's mental health by developing services and programs for the prevention of disorders in this spectrum, but also the diagnostic and treatment services at community level, while improving the capacity of the system to provide affordable and high-quality services (Ministerul Sănătăţii, 2014). The questions are: which are the best ways to achieve these goals and provide more patient-centred mental health services? Can digitalization really benefit mental health, especially for prevention and screening services?

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Digitalization has been and still is a very important topic for all domains of activity. When it comes to digitalization in the healthcare sector, medical assistance through digital technologies is on an ascending path. More and more healthcare systems come to realize that digitalization transforms and generates added-value for the patient's care worldwide (Institute of Medicine, 2010). Even if, theoretically speaking, digital health seems easy to be defined and implemented, using new technologies for the health and wellbeing of the population must consider not only the IT&C infrastructure (Binder, 2008) or the government and healthcare systems' capacities to make the transition to digitalization. It also must consider the consumer's behaviour on the healthcare market, as well as the determining factors and the constant changes occurring in the way they consume services on this market (Chanda, 2019). In this context, there is a need to understand how people relate to technology, how they behave towards digital tools and how digitalization can be used not only for delivering services for treating patients, but also to prevent medical conditions and provide more patient-centred services.

The current paper aims to determine the opinions, perceptions and behaviour of Romanian adults regarding the prevention and treatment of mild mental disorders, i.e. depression, with a focus on using digital tools for preventing mild depression, investigating the acceptability of mobile health applications for this purpose. For this, a qualitative study based on 2 focus groups was carried out among Romanian adults in Brasov.

The paper is structured into six sections. The first section is an introductory one. The 2nd section approaches the state of the art, the literature review being a starting point in defining the problem to be researched. In the 3rd section, the main objectives of the research are stated. The 4th section approaches the research method and materials used for the current paper. The 5th section was dedicated to the results and discussions, while the 6th includes the limitations and conclusions, followed by the references list.

2. Literature review

Depression is a condition that affects over 260 million people globally and in Romania more than 5% of the population, according to the World Health Organization (World Health Organization, 2017). Besides being one of the world's major causes of morbidity and mortality (World Health Organization, 1996), depression leads to an important economic burden for today's society (Greenberg, 2003; Lynch, 2006). The economic impact of depression is significant, experts estimating that in our country depression causes annual losses of 1% of GDP (Patriche, et al., 2015).

Although it is defined as a chronic illness, as over 80% of people experiencing a depressive episode most certainly experience another episode within 15 years (Mueller et al, 1999), depression is among the most treatable mental disorders (Institute of Medicine, 2001). However, depression is often unrecognized or hidden by the population mainly because of stigma, discrimination and poor health education (Cucoş, 2017).

As depression prevalence has been constantly increasing over time, researchers and policymakers realized the importance of prevention services and efforts regarding depression (National Research Council, Institute of Medicine, 2009).

In Romania, most cases of depression are detected in advanced stages, when treatment becomes much more expensive and less effective or when the disease has already influenced the evolution of other cardiovascular or chronic diseases. Depression, however, is easy to treat if detected in early stages (Manasi & Vâlceanu, 2012).

Depression generates extremely high costs for the society, some of them being almost impossible to quantify (European Commission, 2008). To understand the aspects related to mental health, however, it is necessary to have coherent and effective diagnostic, treatment and prevention services (Ududec, et al., 2015). Identifying and promoting the latter is paramount for successful mental health programs. Therefore, for a population with good mental health, access to effective and adequate services for the prevention and treatment of mental disorders is needed (Muñoz, 2016).

Digitalization in the healthcare market significantly influences health systems, as services become more consumer-oriented, thus enabling consumers to easier decide for their health (World Economic Forum, 2020).

IT&C and digitalization influence healthcare systems around the world. New technologies promote the accessibility and efficiency of health services, transforming the way in which health care is addressed by both individual and organizational consumers (Author, 2019). Therefore, digitalization and its impact on depression prevention campaigns is a topic worth addressing.

3. Objectives and Hypotheses

Considering the status of the researched field and the previously conducted studies (Muñoz, 2016, Petersen, 2016, Moriarty, 2020), the present study was based on a set of general assumptions formulated by the authors:

(1) The majority of the participants think that there are insufficient information and campaigns on preventing, detecting or treating mild depression.

(2) A part of the respondents considers that technology and digital tools can replace traditional services in preventing, detecting and treating mild forms of depression.

(3) Some members of the sample consider that mobile applications help them monitor and improve their health.

Based on the previously stated assumptions, the main objectives of this qualitative research were:

(1) to determine the participants' perception of the actions and campaigns regarding depression prevention

(2) to determine the respondents' attitudes on using digital services and apps in mental healthcare

(3) to identify the participants' opinions on using technology tools for the prevention, detection or treatment of mild depression.

4. Research Methodology

To meet the goal of the research, the authors chose, as a qualitative research method, the focus group. The focus group involves a wide discussion with a group of participants,

on different topics, for 1 to 2 hours (Constantin, 2013).

The focus group has several advantages that lead authors to choose this method for the current research. Some of these advantages based on which the authors chose the focus group as a method for their research are:

- (a) health is a delicate topic, so within a focus group, interaction and group dynamics can stimulate answers;
- (a) focus groups can generate ideas of interest that were previously ignored;
- (a) this research method provides the participants with the possibility to detail their opinions, attitudes and feelings, these being of great interest in topics such as mental health.

Specific to focus groups, the number for each group interview is usually between 6-12 participants (Constantin, 2013). Considering this, two focus groups were established in the city of Brasov, and for each group interview the authors set a sample of eight participants. For this research, respondents were recruited considering certain conditions (in terms of age, gender, location etc.). Therefore, 16 adults (9 women and 7 men) aged 18 to 55 were recruited following a recruitment questionnaire distributed in 1 psychology office, a psychiatry centre and 2 family practitioners from Brasov. Each focus group lasted for about 60 minutes; the discussions were based on an interview guide. The current qualitative research was conducted in Brasov, in February 2020.

The group interviews followed topics from general to particular and aspects from simple to complex. While firstly the participants freely expressed their opinions and views regarding the importance of mental health and wellbeing, the group was guided, systematically, through in-depth discussions on the proposed theme (preventing mild depression by using technology). The discussions followed the themes existing in the interview guide, the interviewer mentioning beforehand the main topics (for example: Care for health and mental disorders prevention, Technology use in mental health, Depression prevention campaigns, Mobile Apps for preventing, detecting or treating mild depression etc.) to be discussed.

As focus groups generate relatively large quantities of raw data, comprising primary data obtained, it is necessary to facilitate the interpretation without losing their meaning and significance. Therefore, in the conducted research, primary data were obtained by audio-video recordings that were analysed. Moreover, important information was obtained by applying specific techniques such as word association, as well as unfinished phrases completion techniques etc.

After data gathering and preparation, the authors proceeded to analyse the obtained data using both vertical and horizontal content analysis methods.

5. Results and Discussions

Following the qualitative focus group research conducted, entitled "Opinions, attitudes, beliefs, motives and knowledge of adults in Brasov on the prevention and treatment of mild mental illness (depression and anxiety)", in which 16 respondents participated, both horizontal and vertical content analysis was carried out. Some of the main results are stated down below:

5.1. Promotion methods and campaigns for preventing, detecting or treating mild depression

Few participants have heard of depression campaigns in Romania (Table 1).

Knowledge of existing depression prevention campaigns in Romania Table 1

Do you know about depression prevention campaigns in Romania? [% of n, n=16]	Yes		No
	NGOs	Public Authorities	
		26	12

Most of those who knew of such campaigns mentioned actions carried out by NGOs or television (i.e. DepreHUB, ProTV campaigns). Only two respondents recalled campaigns carried out by the public authorities or medical units in this regard.

Most respondents believe that, at present, mental health and campaigns for the prevention, detection or treatment of depression are not a priority for the Romanian system, and that mental illness is not given due importance. At the same time, in general, the participants consider that currently the object of the campaigns is given by aspects or vices deriving from depression (suicide, alcohol consumption, drug use, etc.) and that this approach should be changed so that such campaigns have a greater effect among the population. Participants think that for well-organized campaigns with positive and quantifiable effects, health education and the use of technologies in communication and promotion are essential.

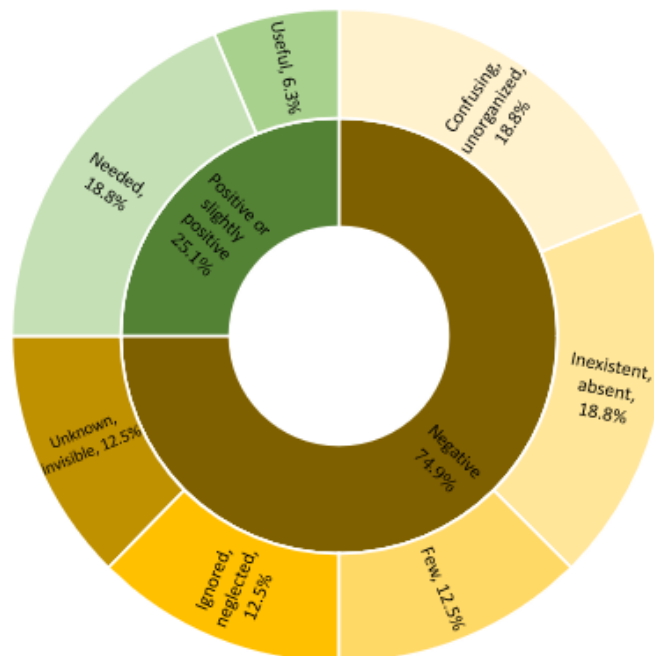


Fig. 1. Words assigned for depression preventing and screening campaigns, n=16

To highlight the overall picture of the mental health prevention services in Romania, respondents associated words to describe the current state of prevention and screening of depression campaigns in our country. 12 out of the 16 participants of the focus group emphasized the ignorance regarding organizing and conducting campaigns for the prevention or detection of depression in the early stages (Figure 1). Almost 75% of the participants in this research assigned negative words such as “neglected”, “absent”, “confusing”, “ignored”, “invisible” and so on. This reflects the overall picture of the attitude and the importance given to prevention campaigns so far by those in charge to deliver such campaigns for the mental wellbeing of the Romanians. On the other hand, assigned words such as “necessary”, “needed”, “useful” emphasize the awareness of the participants regarding the importance of such actions to prevent and screen depression.

5.2. Digital tools & technology for communication and prevention campaigns in mental health

One of the topics discussed within the focus group referred to communication methods and prevention campaigns and services for depression using digital tools. Most of the subjects consider that online means and instruments provided by technology i.e. Social Media, Blogs, Mobile Apps, Viral Social Experiments etc., are useful and efficient to inform about preventing, screening and treating mild depression. Some of the participants tend to believe that combining digital tools with traditional means such as banners, flyers and word of mouth is the key to efficient communication and prevention campaigns in this field. All the respondents consider that technology can help prevent and detect depression especially as it facilitates communication, data and information transfer, but also improves access to prevention and screening services. Although they state that the use of technology in this regard comes with reluctance in terms of security and data protection, some of the participants in the focus group believe that services based on digital technology can complete the current prevention and screening services for depression, while some consider that they can even replace the traditional prevention and screening services for depression, especially in the case of mild forms.

For an in-depth approach, the third person technique was used to determine the respondents’ perceptions on this matter. They were asked what a physician and what technology represents for the mental health and wellbeing of a friend. Table 2 reflects the way participants perceive these actors in coping with and managing their mental health:

Perceptions on the role of physician & technology for mental health Table 2

Physician	Technology
<ul style="list-style-type: none"> - provides support in assessment, diagnosis and treatment; - stress, fear or shame factor; - provides relevant and valid information; - monitors mental state and makes recommendations; 	<ul style="list-style-type: none"> - Fast and accessible sources of information; - Effective means of communication; - Alternative sources of support in the management of the mental health state; - Connects patients and physicians; - Poses dangers to mental health

5.3. Mobile Apps for monitoring and improving mental health

The word association, a relevant projective technique for the qualitative research, was used to identify the participants' opinions on mobile applications for their mental wellbeing and also to determine their attitude towards the potential of digital mental health services. The associated words and the frequency are stated in the treemap in Figure 2.

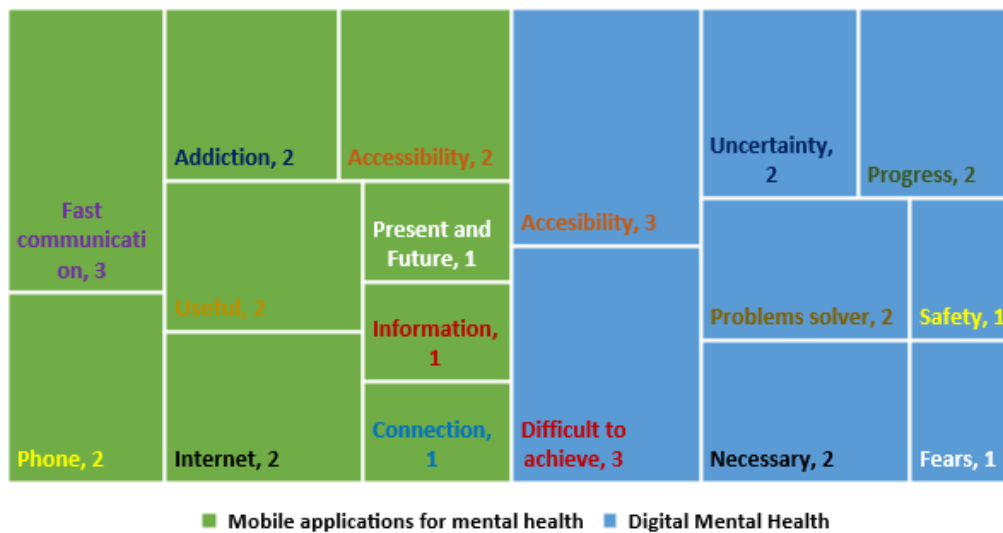


Fig. 2. Words assigned for Mobile Apps for depression and Digital Mental Health, $n=16$

For the mobile Apps for mental health, there were 2 different approaches in terms of the word association. On the one hand, there were 2 respondents associating mobile apps with addiction, thus expressing their negative opinion regarding the fast-paced development of applications and their excessive use; on the other hand, 14 respondents associated words with a positive connotation (i.e. communication, accessibility, information, connection etc.), leading to positive opinions on the use of mobile apps for monitoring mental health and their effectiveness for improving mental wellbeing.

Regarding digital mental health, the associated words denote the scepticism regarding the implementation of this concept for 6 out of the 16 participants. Even so, the majority of the respondents associated words (i.e. progress, ideal, evolution, simplification, necessity, problem solving etc.) that denote their optimism and openness towards the implementation of digital tools in the Romanian mental health sector.

Concerning the way technology and mobile applications can contribute to the monitoring and improvement of mental health, there were very few participants considering that the two concepts can negatively contribute to the field because of reasons such as lack of control, lack of digital skills of the population, and because of the possibility for them to create addiction. Either way, most respondents believe the two concepts can bring effective contributions to monitoring and improving mental health, because of the advantages they bring in terms of accessibility, communication, data storage & transfer, the potential of real-time reporting and cost reductions.

5.4. Limitations

One of the main limits of the research refers to the chosen research method, namely the fact that some participants may be influenced by the responses of the other subjects of the group interview. Moreover, the researcher was not certain whether the information provided by the participants was totally sincere, given the increased degree of sensitivity of the theme chosen for this research. Another limitation concerns the possibility of the researcher to have perceived the meaning of the words expressed by the participants differently, especially in the context of the themes where projective methods were used. At the same time, the possibility of misinterpretation of questions by the subjects or the possible inattention to the answers, may constitute other limitations to this qualitative research. Last but not least, a limit of the qualitative research applied in this paper is that of the impossibility of extrapolating the results obtained.

6. Conclusions

Depression affects hundreds of millions of people worldwide. However, this condition is often undetected or hidden by the population mainly due to stigma, discrimination and poor health education about mental illness. In this context, the existence of programs for monitoring mental health state, as well as the implementation of campaigns for the prevention, screening and treatment of early-stage depression are essential for the wellbeing of the population.

The context of technological progress, the dynamics of mobile technologies, the multitude of functions and options for information, monitoring and online actions favour the integration of technology in the construction of effective campaigns in this direction.

The present qualitative study has identified a sad reality concerning the importance given to mental health prevention and screening campaigns in today's Romania. There is a general perception that there are insufficient actions and campaigns for the prevention and screening of depression and, at the same time, that those few existing ones remain in the shadow, being carried out superficially and developed only in the short term.

The research conducted has also led to determining the respondents' attitudes on digitalization in mental health care and their opinions on using technology and digital tools for the prevention, screening or treatment of mild depression. In the context of digitalization and the need for medical systems to take steps in this direction, technology and its tools can contribute to the effectiveness of prevention campaigns in the field of mental illness, through the advantages it offers, such as fast and easy communication, accessibility, degree of coverage, their potential to reduce stigma, fear, shame associated with these conditions, etc. The context of technological advancement, facilitates the integration of technology in the construction of effective campaigns; in this respect, the relevant examples that support them refer to mobile applications for monitoring physical activity and food, wellness applications, support groups within social networks, specialized forums, viral content etc., consumed by more and more people.

Digitalization is becoming more and more widespread so that people's perception is also developing in this respect. If for the population, the doctor does not only support the assessment, diagnosis and treatment of mental illness, but is also perceived as a factor of stress, fear or shame, technology and mobile applications are fast, accessible sources of information and effective means of communication. However, the results of the current research reveal the need to give greater importance to the components relating to data security and protection for digital mental health services, emphasising that apps could be a valid alternative source of support for people coping with mild depression.

The assumptions established for this qualitative research have been confirmed, with the researchers concluding, following the analysis and interpretation of the data, that the majority of the respondents think that there are insufficient information and campaigns on preventing, detecting or treating mild depression. Hence the greater need for information about preventing/treating mild depressive symptoms. The findings of the research also reveal that some respondents consider that technology and digital tools can replace traditional services in preventing, detecting and treating mild forms of depression. The results also confirm the assumption that some members of the sample believe that mobile applications help them monitor and improve their health, while part of the sample believes that mobile applications can replace traditional medical services in detecting and treating mild forms of depression.

The outcomes of this qualitative research are particularly useful in determining the usefulness of mobile technology in the development of sustainable health policies in which preventive interventions are designed to promote coping and self-management skills among Romanians at risk of depression.

Based on the research and its outcomes, the authors recommend larger scale research in Romania for achieving a higher accuracy of the results. As the qualitative study was conducted in Brasov, extended research could be run in cities from all regions of Romania. This would help us have an overview at national level regarding this research subject. Another future direction of this research is that of using the present results as a basis for conducting quantitative marketing research to determine the degree to which the results obtained are or are not statistically significant at the population level.

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