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Acceptance of mobile mental health treatment applications

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Abstract

Mobile mental health applications are regarded as a promising solution to meet increasing demands in mental health treatment. They are used to treat mental disorders and can only be successful if the treatment population accepts and appreciates them. This research analyses the acceptance of mobile mental health applications by young adults in Germany in order to identify inhibiting factors regarding their use. To describe people's intentions to use mobile treatment applications, an extended version of the technology acceptance model (TAM) is applied. In the past, TAM has already been used to access the acceptance and adaption of new medical applications. The findings suggest that knowledge about the existence and clinical effectiveness of mobile mental health applications are considerably low. Even though, mobile applications are considered easy to use, their effectiveness in treating mental disorders is questioned by the young adults. Furthermore, concerns that personal information can potentially be revealed arise. This can additionally inhibit the acceptance of these applications. To improve the acceptance and increase future usage, mobile mental health applications should be promoted as a supporting tool that is always available for anyone and can facilitate mental treatment.

1. Introduction

Mental health disorders such as anxiety, depression, social anxiety, or substance abuse are an increasing problem in our society. According to the World Health Organization, the gap between the need for treatment of mental disorders and the accessibility of treatment is rising, and already between 35% and 50% of mentally ill clients receive no treatment because appropriate treatment places are rare[1].

One possible solution to meet the demand for mental health treatment can be online treatment[2]. Internet or computer-based cognitive behaviour therapy programs have proven clinically effective for the treatment of a variety of mental disorders[3,4,5]. An advantage of online treatment is its time and cost effectiveness. The amount of time that clinicians require for each client is considerably less than in regular face-to-face treatment[6,7], which means that

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more clients can be supervised than in a conventional therapy setting. Despite the compelling evidence regarding the effectiveness, of computer or Internet-based treatment, the acceptance of Internet treatment outside the health sector is considerably lower[8]. Studies regarding the acceptability of web-based treatment programs among the population report mixed results. It appears that the wide-spread opinion among the population is that online treatment is only effective in cases of mild and moderate symptoms[9] and moreover restricted to certain diseases[10]. However, there are also positive beliefs about online treatment of mental diseases. Former participants in web-based treatment report higher acceptability after using the application compared to before. They are also more inclined to use such services in the future again[9]. In the case of anxiety and depression, it appears that online treatment would even be a preferable treatment option because of anonymity concerns[8]. In addition, the convenience of accessing online treatment from home, and the fact that it does not require waiting time to start with the therapy are reasons in favour of online treatment[10].

However, the majority of the research that has been conducted in this area is concerned about the usage of web-based online intervention programs that require a stand-alone PC. But today's mental health applications are mostly mobile phone applications that are carried around in one's pocket and are accessible any time. Another advantage of these smart-phone applications is that they do not only provide useful interventions and screenings to track a user's improvement, they can also make use of the smart-phone's sensors to measure current location, activity and recent calls. With these measures, the client's current condition can be assessed and momentary interventions can be triggered to assist the client in difficult and stressful situations[11,12].

This study analyses the acceptance and intention to use mobile mental health treatment applications by young adults in the Germany population. Adults between the ages of 18 and 35 are focused in this research because it might take some years until mobile mental health treatment applications are widely available. They also represent the future target population that might require mental health treatment. Additionally, young adults are open to new technology, already familiar with the use of mobile phones, and adapting to the use of mobile mental health treatment applications might require less effort for them than for older people. To infer the current acceptance and future intentional use of such applications, the technology acceptance model (TAM)[13] is used. The results lead to implications for promoting and developing greater acceptance of mobile mental health applications because the success of these applications depends on understanding peoples concerns and identifying the factors that promote or inhibit their use.

2. Method

2.1. Structural equation model

To describe people's intentions to use mobile mental health applications, a structural equation model was developed. This model is based on the technology acceptance model (TAM)[13] and on previous research about acceptance of mobile services. In previous research, TAM was introduced to estimate acceptance of technological innovations and predict their future use in companies. The main components in TAM that describe the intention to use a new technology are perceived usefulness and perceived ease of use. Perceived usefulness is the impact a user expects on their performance due to their system use; perceived ease of use describes the users anticipated effort in using the new system.

The number of concepts that explain the acceptance of new technologies were further refined and extended in TAM2[14,15], Unified Theory of Acceptance and Use of Technology (UTAUT)[16], and UTAUT2[17]. Adaptations of TAM have already been used in the context of medical applications for evaluating a variety of technologies such as a fictional online diagnosis program[18], use of virtual reality as a therapeutic tool[19], and intention to use telepsychotherapy[20].

The centre of the model developed here is represented by the perceived ease of use and perceived usefulness of mobile mental health applications. These concepts mainly influence a client's intention to use such an application when facing mental health problems (H1, H2). Furthermore, in TAM the perceived ease of use also influences the perceived usefulness (H3) of the application. To the concepts of perceived usefulness and ease of use, the concept of social influence is added.

The concept of social influence is part of UTAT, TAM3, and various research studies that evaluate the future of mobile services[21,22]. Social influence describes to which extent users perceive that their social environment, such as family members, friends, and colleagues, believe the application should be used. Therefore, social influence is