A Gamification Update to the Taxonomy of Technology and Mental Health

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Madeline R. Marks
University of Central Florida, USA

Amanda C. Tan
University of Central Florida, USA

Clint Bowers
University of Central Florida, USA

INTRODUCTION

Mental health providers cannot ignore the importance of utilizing technology in this era of the "Internet of Things." This chapter reaffirms the need for mental health providers and software developers to work in concert with each other when developing technology for mental health. We also articulate the importance of the patient and the patient's role in connecting technology into the equation.

BACKGROUND

The Problem

Marks and Bowers (2014) developed a taxonomy that allowed mental health providers to understand how technology, can benefit patients as well as direct the provider to the proper platform depending on the aspect of the patient's mental health requirements. A taxonomy was developed that included classifications of disorders with specific disorders from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (*DSM-5*), delivery platform i.e., mobile device, personal computer, and video game console, and the four classifications of mental health services (e.g., Training, Therapy, Assessment, and Prevention). This taxonomy guided developers to focus on building mental health technology (mHealth) that revolve around a particular sector. Further, the taxonomy capitalized on the similarities between providers and developers in achieving the end-goal of repeated and continued use of their respective product (therapeutic services and software). However, the previous taxonomy did not account for the different motivational strategies employed to reach the end-goal; in the design and development of mHealth providers and developers focus on two different factors. Providers focus on delivering evidenced-based treatments driven by underlying mechanisms of action (MOA); whereas, developers focus on delivering usable and entertaining technology. Compounding this disparate approach between providers and developers is the failure to take into account the patient perspective. The present chapter presents a revised taxonomy that represents the integration of MOA, usability and entertainment, engagement to create gamified technology for the purpose of increasing, repeated and continued engagement with the technology, by the end-user. The taxonomy has been revised to reflect the change of including the end-user and integration of gamification. Additional changes have been made to the taxonomy to better represent this new focus. These include changes to the component of Training, which is now called Psychoeducation; Assessment, which has been removed from the taxonomy because the focus of technology for assessment is not for the

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end-user. All changes have been made in an effort to better synthesize the newly added information afforded by considering the end-user, in pursuit of creating repeated and continuous engagement with mHealth.

To better understand the disparate approaches between providers and developers and how the end-user will be incorporated, an explanation of each motivational target of the triad is warranted.

Provider

The mental health provider's goal is clear: it is to help a patient improve upon a targeted domain that is interfering with the patient's quality of life. Mental health providers agree that motivation is a key component to attendance and participation in treatment. Without motivation, therapeutic processes cannot take place nor be effective. At each step of the therapeutic process the mental health provider guides the patient through the therapeutic process, and works with the patient to determine the pace of progression to end goals. It is through clinical experience that is informed by research, that the provider makes these crucial decisions.

The therapeutic process involves the general components of 1) establishing a therapeutic alliance, 2) establishing what is the patient's commitment to change, conducting a behavioral analysis, coordinating treatment objectives, 3) executing treatment and maintaining motivation, monitoring progress, and 4) planning for treatment termination by generalizing skills (Rosenbaum & Horowitz, 1983). These steps create a tailored versus standardized treatment structure, and encourages the patient to be an active participant in the progression toward change (Kanfer & Grimm, 1980). It creates a therapeutic alliance between the mental health provider and the patient. The therapeutic alliance refers to the patient's experience as to the mental health provider's empathy; it refers to the patient's belief as to the provider's credibility as an expert; it refers to the patient's perceived rapport with the provider; it refers to the patient's perception that he or she is receiving the help needed from the provider; it is the patient's perspective that the provider is engaged; it refers to the patient's perception that the treatment is a process working toward specified goals (Elvins & Green, 2008) This therapeutic alliance, while not a specific strategy for motivating patients, encompasses all domains of influencing motivation to adhere to treatment (Barrett, Chua, Crits-Christoph, Gibbons, & Thompson, 2008; Bordin, 1994). The best form of treatment requires practitioners to focus on evidence that supports effective intervention using evidence-based treatments. Evidence-based treatment involves the integration of best available research, clinical expertise, and consideration of individual patient characteristics (Anderson, 2006). In essence, each treatment has an underlying MOA. Considering that mental health providers should be delivering evidence-based treatment in a traditional face-to-face format, providers should continue to provide the best possible treatment regardless of the platform. The focus of the mental health provider is on mHealth's ability to support treatment rationale and adherence to clinical practice.

Developer

Adams (2014) describes the developer's job as brainstorming designs, creating meaning, distinguishing content, and testing the technology. Adams organizes the developer's software designing job into a three-part system:

1. **Concept Stage:** Deciding the kind of technology to develop.
2. **Elaboration Stage:** Creating and developing the software, then conducting usability testing.
3. **Tuning Stage:** Preparing the software for release, including fixing errors in code.

The second and third steps are particularly important because developers desire for users to spend time playing the software and do so on a repeated basis, which, as an aside, is consistent