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Acceptance of Online Health Services for Self-Help in the Context of Mental Health: Understanding Young Adults' Experiences

Abstract

This paper explores the understanding of the acceptance of online health services from a self-help perspective in the context of mental health. By examining the experiences of young adults, this paper develops a framework to leverage the current understanding of the factors that would support the acceptance and use of these types of services. To this end, a multidisciplinary perspective incorporating knowledge from the service marketing, health, and information systems literature is used. The results suggest that the production of online services that are meant for self-help purposes necessitates a focus on the acceptance of technology and, more importantly, instrumental value creation, as the purpose of using these types of services should be better understood and supported by technological solutions. This study also identifies several technological features supporting both the acceptance of technology and users' ability to achieve well-being. Furthermore, when developing services for health self-help purposes, the issue of branding to increase acceptance should be assessed. From a user perspective, there appears to be a difference regarding whether the services are positioned as health services or as wellness services.

Keywords: online service, self-service, transformative service, mental health, technology acceptance

1. Introduction

A range of online health services increasingly forms part of health ecosystems, providing a platform for users that has the potential to empower them by improving their access to knowledge, understanding, and potentially recommended activities that could improve their health and well-being (see, e.g., McColl-Kennedy et al., 2017; Tian et al., 2014). For example, in the context of mental health, different electronic and mobile mental health services exist to improve prevention, treatment, and aftercare with regard to mental health problems (see, e.g., Musiat et al., 2014). Using online sources to seek health information is especially natural for young adults, for whom online search engines and health websites are the most important sources of health information (Chen & Lee, 2014; Johnson & Kalkbrenner, 2017; Zhang, 2013). For this group, online mental health services appear to have tremendous potential. In general, these types of online resources have the potential to enable the achievable, population-wide prevention of mental disorders by helping people to become empowered, informed, and actively involved in their health (Barak & Grohol, 2011). At their best, they provide easy, accessible self-help that has the potential to reduce the likelihood of health issues becoming more serious conditions and can, hence, function proactively (Currie et al., 2010). To leverage the potential of online health services, it is crucial to understand how they can assist their users to not only gain information but also improve their well-being.

Thus, the aim of this paper is to explore our understanding of the acceptance of online health services from a self-help perspective. Accordingly, it proposes and empirically develops a framework to extend the current understanding of the aspects that would support the acceptance of these types of services from young adults' perspective in the context of mental health.

For this purpose, a multidisciplinary perspective is adopted. The services that are meant to enhance an individual's well-being form a specific group called transformative services (see Anderson & Ostrom, 2015; Ostrom et al., 2015; Schuster et al., 2013), which offer an effective starting point from which to better understand technologies designed for self-help purposes. Thus, utilizing service theories, this paper leverages the current eHealth discussion regarding how the Internet can be harnessed to deliver health outcomes, particularly from the health-related self-service perspective (see e.g., Kelson, Lam, Keep, & Cambell, 2017; Stellefson et al., 2011). To make technology effective in this context, this paper also points out aspects that need to be considered from not only a technical but also a communicative perspective. Thus, the current discussion about the potential of information technology in the context of mental health service provision (see, e.g., Brusilovskiy et al., 2016; Chen, & Lee, 2014; Dowling & Rickwood, 2016; Johnson & Kalkbrenner, 2017; Kelson, Lam, Keep, & Cambell, 2017; Sebastian & Richards, 2017; Singleton, Abeles, & Smith, 2016) is advanced.

This paper is structured as follows. First, the special characteristics of self-services are examined in detail following the creation of a theoretical framework to understand the acceptance of online self-services in the health context. Thereafter, the context of this paper is

described, and the methodology is explained. Finally, the results are presented, and conclusions are offered.

2. Theory

2.1. The Utilization of Health-Related Online Self-Services and the Understanding of the Value Creation Within Them

Uses and gratifications theory explains how people use particular media and especially how they use them to satisfy their needs. The theory explains that most of our media use is goal-directed (Dholakia et al., 2004), which means that people use media to fulfill specific purposes. They might seek informational value in meeting their knowledge needs or instrumental value in using media to accomplish specific tasks (see, e.g., Dholakia et al., 2004). In the health context, people use the Internet to search for information on health topics, to participate in online support groups, and to purchase medicine, among other reasons (Barak & Grohol, 2011). Indeed, the recent development of health services has led to the creation of different types of online self-services that people can access to enhance their well-being. Instead of providing solely informational value, such as knowledge, instrumental value is also meant to be produced.

In service marketing, a research stream, transformative service research (TSR), and its subarea of digital transformative services focus on the relationship between digital services and consumer well-being (as value) (Anderson & Ostrom, 2015; Ostrom et al., 2015). The TSR research stream can help to understand technologies designed for self-help purposes. In this context, one important factor is to understand that the premise of successful transformative service usage is that individuals need to actively participate in their value co-creation in the service context to acquire greater well-being as an instrumental value (see Grönroos, 2006; Vargo & Lusch, 2004).

In the context of self-services, the adoption of the new term *value self-creation* has been suggested (see Zainuddin et al., 2016) to emphasize the user's individual and active role in value creation. In the role of independent value creator, the user is seen as solely responsible for value creation, whereas an organization is seen as a value facilitator, for example, in providing a digital platform to facilitate value creation. This is an important aspect to understand, as co-creation is essentially seen as something in which the responsibility for value creation is shared (Zainuddin et al., 2016). However, in both co-creation and self-creation, the user is expected to play an active role; in the latter (self-creation), an even more independent role is required, and in co-creation, value creation is often supported by human interaction. These concepts should not be understood as excluding each other but as a continuum (Zainuddin et al., 2016). In this paper, the concept of value self-creation is adopted not only to emphasize the role of the individual in it but also because of its suitability in the context of online self-services.

2.2. The Acceptance of Online Self-Services in the Health Context

The technology acceptance model states that perceived usefulness and perceived ease of use define the acceptability of a system and are fundamental determinants of use acceptance (Davis, 1989). Usefulness is seen as a reason for people to adopt a new technology, and ease of use is seen as a secondary aspect of technology acceptance (Davis, 1989). These two aspects have been identified as the key mediators in the acceptance of self-service technologies (see Blut et al., 2017); thus, this approach serves as the basis for this paper.

Although it is important to understand the acceptance of technology itself, in the case of online self-services, users' willingness and ability to participate in value self-creation should also be addressed. In the context of the adoption of mobile applications to support mental health, Schuster et al. (2013) noted that individuals were confident about their ability to use technology but had doubts regarding their ability to effectively participate in the value co-production[1] of the service. Furthermore, Schuster et al. (2013) suggested distinguishing between two different types of self-efficacies: (a) technological self-efficacy (the ability to use technology to access and deliver the service) and (b) co-production self-efficacy (the ability to co-produce value in the service through technology without the involvement of service provider staff/human contact). Consequently, when examining the acceptance of online self-services, we need to address the acceptance aspects from the points of view of both the acceptance of technology (the perceived usefulness and ease of use of the technology) and the acceptance of value self-creation (the perceived usefulness and ease of use of the service). Furthermore, to make better sense of these concepts and their relationships, we need to identify technological features that enhance the acceptance of a system and of value self-creation.

In the technology acceptance context, perceived usefulness refers to the evaluation of the channels' usage outcomes, and perceived ease of use refers to the degree to which a person believes that using a system is free of effort (see Davis, 1989). In the transformative service context, usefulness can be seen as an evaluation of the well-being benefits associated with the self-creation of value, and ease of use refers to the degree to which a person believes that he or she is able to self-create value. Table 1 below illustrates this logic and suggests a framework for evaluating and understanding the acceptance of these types of services.

Table 1

Acceptancec Aspects of Online Transformative Services

	Acceptance aspects related to technology	**Acceptance aspects related to value self-creation**
Ease of use	**I am able** to use technology.	**I am able** to self-create value. I know what to do.
Usefulness	Using this technology has **benefits** for me.	Value self-creation **benefits** my well-being.

[1] Schuster et al. (2013) use the term co-production instead of co-creation. Furthermore, based on the terms used by Zainuddin et al. (2016), they mean value self-creation.

Research examining user perceptions of acceptability in the context of digitally delivered mental health self-help programs is in its infancy. The few studies examining the phenomenon emphasize the technological perspective (see, e.g., Currie et al., 2010), and a similar emphasis is found in studies that examine the acceptance of digital over non-digital treatment options where acceptance is often studied in the context of randomized control trials, which might paint an overly positive picture of the acceptance of these types of services (see, e.g., Musiat et al., 2014). The current paper advocates the use of a more comprehensive understanding of the acceptance of these special types of services.

3. Method

3.1. Context of the Study

The digital service examined in this paper is a mental health website that was developed by the well-known hospital in a country. The site is designed to promote self-help and includes professionally developed content related to different mental health aspects, as well as guidelines on how to identify mental health problems, steps one can take to improve one's well-being, and where one can go if one experiences mental health challenges. The studied site is seen as a combination of the two subtypes of web-based interventions (see Barak et al., 2009). The first is *web-based education interventions*, which are designed to offer educational content in a particular program area. Such interventions, like the studied website, can be both *inactive* (in that they aim to improve knowledge, awareness, and understanding) and *active* (content that contains general behavioral instructions) (Barak et al., 2009). The second subtype is *self-guided web-based therapeutic interventions*, which are self-guided[2] that aim to create positive cognitive, behavioral, and emotional change. In practice, this means that content is often presented in a modular and highly structured format, creating a path of instruction for how to manage with a certain condition (Barak et al., 2009). Accordingly, instead of providing merely informational value, instrumental value is meant to be delivered through the more structured content.

3.2. Data Collection

This paper uses complementary qualitative methods to explore the experiences of young adults who are not currently suffering from mental health problems. This target group was chosen because the purpose of the website is to function in a preventive manner and provide assistance before more formal interventions. Furthermore, as explained, young adults increasingly seek health information online and, hence, are a natural target group for these kinds of services.

Earlier studies have suggested that qualitative feedback from a target population can help developers determine whether a service will be effective and achieve its purpose (e.g., Currie et al., 2010; Hartmann et al., 2007). Participants were recruited via two social networking sites (SNSs) on which young adults discuss their health problems, as well as via the research team

[2] These can also be human-supported (see Barak et al., 2009); however, considering the empirical context of this paper, the focus is on self-guided interventions.

members' circle of acquaintances. Altogether, nine young people participated in the study (Table 2).

Table 2

Study Participants

ID	Sex	Age	Occupation	Length of interview	Interview method
1	Female	25	Student	56.01	Face-to-face
2	Female	23	Student	42.01	Face-to-face
3	Female	24	Working	50.29	Face-to-face
4	Female	25	Working/part-time student	48.37	Face-to-face
5	Female	28	Student	53.54	Phone
6	Male	25	Working/part-time student	35.44	Face-to-face
7	Male	29	Working	41.20	Face-to-face
8	Female	25	Working/currently on maternity leave	33.37	Skype
9	Male	20	Student	50.09	Phone

The inclusion criteria were as follows: aged between 18 and 30 and having an interest in web-based mental health services. Of the nine participants, only one was successfully recruited via an SNS, which is probably an indication of the sensitivity of the research topic. Interested candidates were asked to confirm their willingness to participate by communicating this to the interviewer via telephone or e-mail. Participation was voluntary, and all the participants were told that they could end their participation at any time. Before the study, all the participants were informed that the web service was national and provided knowledge and tools for improving mental health and well-being.

The young adult participants were asked to visit the focal website over a one-week period to familiarize themselves with the web service. During this week, the participants were asked to record their experiences with the service in a diary and then submit the diary to the interviewer before the interview. The diary method was selected particularly to identify acceptance problems and issues that might foster the development of the usefulness of the service (see Kushniruk, 2002). After the one-week period, the participants were interviewed by one research team member. The semi-structured interviews included themes related to the participants' perceptions of the ease of use and usefulness of the web service. The interviews were conducted face to face (6), via telephone (2), or via Skype (1). All the interviews were transcribed verbatim.

During the interviews, the participants were asked to open the web service and state any thoughts they had about it, including its user interface (e.g., layout, appearance, content, and clarity). This think-aloud method—a representative sample of subjects is asked to interact with a system and "think aloud" while doing so (Kushniruk, 2002)—has been proved to produce reliable and rich information on thoughts that a participant would otherwise not remember during an interview (Charters, 2003).

3.3. Data Analysis

The data were analyzed and coded abductively (Dubois & Gadde, 2002) using NVivo software. First, initial codes were assigned inductively from the data, following comparisons and refinements of codes based on theoretical concepts that guided the organization of the data. The goal was to identify different experiences related to service usefulness and ease of use, following the technology acceptance model (see Davis, 1989). During this phase, it was noted that some themes were related to technology acceptance, but others were related to the value self-creation acceptance of the service (see Schuster et al., 2013); hence, the experiences were organized accordingly.

4. Results

4.1. Experiences Related to Usefulness

None of the interviewees had used the studied service before, and only one had heard about it. In general, the young adults described themselves as frequent users of different digital well-being services. They described reading health-related blogs and using digital devices to track their activity levels. However, they did not identify themselves as users of online health services or health-related websites. Health and well-being were also seen as two very different constructs. Health was strongly related to having some sort of health concern, whereas wellness was related to everyday life.

> Well, it depends on what is defined as a health service. Yes, I use them if all these well-being services are defined as such—for example, if the sleep cycle app is seen as a health service, then I use them every day. (Interviewee 1)

Although none of the interviewees were experiencing mental health concerns at the time of the interview, many felt that they were benefiting from the site and its learning tools, which aimed to improve their well-being. This was also an aspect that surprised the users themselves. The general interpretation was that the site also provided beneficial general knowledge, not solely knowledge related to mental health. The doubts that interviewees had also reflects the strong stigma that is still associated with mental health issues. Like interviewee 5 stated, “Especially those mindfulness things . . . there was also content that is for everyone. It was a very positive thing.”

This notion raises an important issue about the branding and labeling of transformative services. It seems that if these online sites aim to support general mental health and well-being, it might be beneficial to position them as wellness services rather than online health services; this might better support their role in preventive care.

> Interviewee 3: Well, I first thought that there was just content for those with mental health problems.
> Interviewer: Do you know why you thought so?
> Interviewee 3: Well, I think it was the name of the website. Hence, I did not think that it would be such a universal service.

When the interviewees were asked whether they would be willing to use the service in the future, aspects related to goal-oriented behaviors and instrumental Internet use surfaced as the main reasons to engage with this type of service. The interviewees voiced their need for a reason to visit the site. Like interviewee 7 stated, "If I had a need or if I had something that concerned me, why not [use the service in the future]?"

All the interviewees were supportive of the general existence of these kinds of digital mental health services and hoped that people would find them. The fact that the service is based on reliable knowledge was appreciated and was seen as an important factor, as the knowledge of health or well-being issues was often perceived to be based on blogs or discussion forums. The feeling of reliable information was strongly associated with the service provider's name and brand.

> Interviewer: Why do you think this site is reliable?
> Interviewee 1: Well, because X [brand of the hospital] is visible there . . . I have read information from blogs and such, but this is much more reliable. They really know; these things [information on the site] are not just fabricated.

4.2. Experiences Related to Ease of Use

Although the information was highly appreciated by the interviewees, in some cases, they described feeling overwhelmed by the amount, especially when they were not strongly motivated to go through the content. Like interviewee 2 stated, "It just feels like there is so much information! It feels like I just cannot go through all of it. There are so many diagnoses and other stuff!"

In addition, the importance of designing the site in a functional manner was mentioned. The interviewees called for elements to support their navigation of the site:

> There are so many things to read, and it feels like the user just drowns in the information. It would be good if there were some tool or something that would help to curate the content, such as if you feel this, you should use this, or contact the doctor if this, or this would work for you. (Interviewee 4)

The site was also linked with the use of a symptom navigator, which was developed for the site to guide users toward evaluating their own symptoms and their severity and to suggest further steps for them to take. However, the navigator assumes that the user knows what mental health issue he or she might have. Consequently, for the users who did not have severe problems and were more interested in general issues related to mental well-being, it did not provide the necessary navigational guidance. The users called for more general steps to initiate their journey around the site:

> Well, I was thinking there could be some sort of test or something that would pop up; [it would have] questions about your background, how you feel, and kind of guide you to

> find out if these types of services might help in your situation. For example, help a user to see that these types of things would also be helpful, or ask if the user has tried these, like guiding a user to find the right services that would not involve reading all the information to identify the right kind of content. (Interviewee 4)

In some cases, more concrete guidelines and examples that would have provided a clearer structure regarding what to do were suggested. The possibility of interactive communication, which was currently lacking, was raised in all the interviews. The users suggested a chat function that would allow them to directly contact a health professional, for example. This was also seen as a way to help them evaluate whether they needed to contact professionals and as a method that would lower the barrier to requesting help. Another suggestion involved adding a section that would allow users to ask questions:

> Of course, taking resources into account, would it be possible to arrange contact with professionals, like at certain times of the day, or through this service, would it be possible to contact professionals directly? Yes, there is information about service providers in your own area, but if you cannot go there, it would be better if you could make contact through this service. (Interviewee 2)

In addition, users expected to find some element that would allow them to share their experiences and read more about others' stories, "and also, among other users, like some sort of peer support [and] discussions should be offered" (Interviewee 2).

Most of the interviewees (six of the nine) used their mobile devices to navigate the site. It seemed that for them, ensuring that the site worked on mobile devices was a prerequisite. Those who did not use the site via a mobile device stated that their preference was to read text on a bigger screen, and for them, a private use environment was a prerequisite. All the interviewees also spontaneously identified the general benefits that online health services can provide, such as the ability to access services anytime, anonymity, low costs, and low barriers to using the service. The users also appreciated the interactive content, such as videos, quizzes, and audio recordings, and they asked for more visual content on the site. The interactive elements of the site, such as the navigator function, were also identified as the first feature that was used on the site.

4.3. Understanding the Acceptance of Online Health Services for Self-Help

As was the case in the study by Schuster et al. (2013), the participants in this study were confident in their ability to use technology, but they were not convinced of their ability to self-create value via a digital platform. This was visible, as the interviewees had no difficulties using the site from a technological point of view, but they had issues using the content systematically to create value. A particular problem was identifying the practices and content that would benefit them. Accordingly, the experiences identified were categorized based on whether they were related to acceptance from a technological point of view or from a value self-creation point of view. Furthermore, technological features that were seen as related to

each acceptance aspect were identified. Table 3 illustrates how aspects related to improving the ease of use of the site are related to improving users' ability to use the technology itself or to self-create value. Aspects related to improving usefulness are more related to elements that need to be addressed via communicative actions to improve the usefulness of the service to motivate users to participate in value self-creation on the digital platform.

Table 3

Acceptance Aspects of Health-Related Online Self-Services

	Acceptance aspects related to technology		**Acceptance aspects related to value self-creation**	
	Meaning	**Features supporting this**	**Meaning**	**Features supporting this**
Ease of use	**I am able** to use technology.	• Accepted user interface • Clear structure • Mobile usage	**I am able** to participate in value creation. I know what to do.	• Where to start (game elements as a natural way to start browsing) • Navigation assistance • Self-diagnosis tools • Possibility to ask questions • Clear usage paths • Concrete guidelines and compelling content
Usefulness	Using this technology has **benefits** for me.	• 24/7 access (no waiting time) • Convenient location • Low barriers to getting help • Low cost • Anonymity	Value self-creation **benefits** my well-being.	• Trustworthy, reliable information • Credibility of site • Attractive brand (clear service positioning) • Reference stories • Clear value propositions

Acceptance aspects related to technology

The results indicate that acceptance aspects related to technology addressed issues that are often raised in discussions on the benefits of digital services. From the ease-of-use perspective, the behavior experiences seemed to be the user's perception of his or her ability to use the site from a technological perspective. The participants thought that the site's usefulness could be improved by creating an online platform that is easy and straightforward to use, has a clear structure, and is compatible with mobile devices. In terms of the usefulness of the digital service, the interviewees expected that choosing a technology-based service would bring them benefits in terms of functional experiences, such as anonymity, ease of access anytime and from anywhere, and the low barriers to obtaining help that are often related to the use of these types of digital services.

Acceptance aspects related to value self-creation

The identified acceptance aspects related to value self-creation boost our understanding from a self-service point of view. From the ease-of-use perspective, the expectation was that the site as an instrumental value would assist a user to self-create value to increase his or her well-being. The interviews conducted suggest that this latter phase requires clear tools that guide users throughout their journeys on the site by suggesting relevant content and practices, thereby increasing users' confidence in their ability to use the site to create value. Doing so would require designing clear user paths through the site and, more importantly, effectively guiding users to follow the relevant paths. This would also help users to more clearly perceive the usefulness of engaging in value self-creation to enhance their mental well-being. From the usefulness point of view, users expected value self-creation to benefit their well-being. The features supporting this—the trustworthiness and credibility of the service—as well as the incorporation of reference stories from other users and having clearly communicated value propositions for the service were seen as important aspects to address.

5. Discussion and Implications

This paper explored our understanding of the acceptance of online health services from a self-help perspective and created a framework to further our understanding of the aspects that would support this acceptance from young adults' perspective in the mental health context. To this end, a multidisciplinary perspective incorporating knowledge from the service marketing, health, and information systems literature was used.

First, service theories were used to leverage the current eHealth discussion on how the Internet can be harnessed to deliver health outcomes, particularly from a health-related self-service perspective (see Kelson, Lam, Keep, & Cambell, 2017; Stellefson et al., 2011). The results suggest that to advance well-being, we should not only focus on the acceptance of technology but also on acceptance from the value self-creation perspective. This aspect is not yet well understood. Our results confirm and extend Schuster et al.'s (2013) original notion, in that the users in this study were similarly confident in their ability to use technology but were not convinced of their ability to self-create value. This should be addressed not only by enhancing users' ability to use these types of services from a technological point of view but also by designing a service in a way that would encourage and assist users to self-create value via a digital platform. Merely focusing on acceptance from a technological point of view is not sufficient; requirements for desirable and effective value self-creation must also be addressed. Aspects that enhance the acceptance of the technology itself, such as an acceptable and attractive user interface, a clear structure, and mobile device compatibility, should be seen as essential prerequisites for such services; although they do not provide a reason to engage with the service, the ability to derive value is crucial. These findings reflect those of Musiat et al. (2014), who reported that although functional factors related to digital services, such as convenience, 24/7 access, and location of treatment, are important, they do not reflect the likelihood of an individual using the service. The perception of whether or not the service is helpful is the most important criterion. Accordingly, developing easy-to-use technologies and

planning tools that guide and assist users of the online service, creating clear service paths for users, and, most importantly, facilitating their selection of the relevant paths for them and guiding them along those paths are paramount considerations.

With regard to contributing to the discussion about the potential of information technology in the context of mental health service provision (see, e.g., Brusilovskiy et al., 2016; Chen & Lee, 2014; Dowling & Rickwood, 2016; Johnson & Kalkbrenner, 2017; Kelson, Lam, Keep, & Cambell, 2017; Sebastian & Richards, 2017; Singleton, Abeles, & Smith, 2016), the results of this paper address important points of view related to communicating these types of services that should provide help from a preventive perspective. From a user perspective, there appears to be a difference regarding whether the services are positioned as health services or as wellness services. When creating services that are presented to the public as preventive activities, labeling them as wellness services might be beneficial and might alleviate users' fears regarding stigmatization by the public or self-stigmatization (in terms of how they view their own mental illness).

6. Limitations and Future Research Suggestions

As with all research, the current study has its limitations. The small number of participants limits the generalization of the results. Furthermore, the interviewees were young adults who were all highly computer literate, which is a fact that needs to be understood when interpreting the results. This paper opens several interesting avenues for further research. Further examination of the elements that support value self-creation and make it desirable would help organizations to design better online services for self-help purposes. Although this paper provides a framework to help understand these types of services, the framework would benefit from further testing and development. How the value self-creation process might be encouraged and supported in different contexts, among different target groups, and in a range of situations merits investigation. This study encourages researchers to scrutinize the adoption of mental health services from a branding perspective, which appears to be an area of research that is not well understood. This paper also raises an interesting question about the segmentation of services while identifying different customer types and increasing the understanding of how to serve customers with different needs through online services. Digital platforms make it possible to tailor the usage experience, but it remains unclear exactly how this potential can be used in the context of self-administered services. Finally, this study also highlights the importance of studying digital transformative services as part of preventive health care, specifically in terms of their potential and role.

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