12

Current Perspectives on e-Mental-Health Self-Help Treatments: Exploring the "Black Box" of Public Views, Perceptions, and Attitudes Toward the Digitalization of Mental Health Care

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12.1 e-Mental Health Self-Help Treatments: Insights into the Digitalization of Mental Health Care

Over the past decade, the Internet has profoundly changed everyday interactions and relationships in private and public areas, including the access to health information and innovations in mental health care. Considering both the increasing usage of the Internet as informal mental health counselor and persisting barriers for help-seeking individuals in traditional face-to-face settings, Internet-based self-help treatments for mental health problems have been suggested as suitable instruments to

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increase the public access to professional help. However, commonly cited benefits of Web-delivered electronic mental health (i.e., e-mental health) programs or mobile mental health applications (i.e., m-health apps) have been repeatedly challenged by the facticity of health-care systems. Drawing on the growing evidence based on the effectiveness of online treatments for prevalent mental disorders like depression contrasting with their lethargic implementation into health care, looking into the "black box" of prospective service users (i.e., involved mental aspects) may help in identifying psychological barriers such as acceptability issues. Hence, this chapter aims to illustrate current perspectives and new challenges surrounding "human factors" within digitalization of mental health care.

12.1.1 Defining the Subject of e-Mental Health and m-Mental Health Treatments and Its Relevance to Mental Health Care

Generally, e-mental health and m-mental health involve the utilization of technology for the Web-delivered supply of psychological services in health promotion, prevention, self-help, psycho-education, monitoring, counseling, psychotherapy, aftercare, and rehabilitation (Van Der Krieke et al. 2014; Lal and Adair 2014; Musiat et al. 2014). Actually, the diversity in content and provision modes of e-mental health interventions is also reflected by the application of various and partially inconsistent definitions or program labels (Oh et al. 2005; Wells et al. 2007; Lin et al. 2013; for example, see Fig. 12.1).

In view of the ubiquitous discrepancy between the demand for and supply with effective mental health services for common mental problems, the implementation of online self-help treatments into primary care is considered as a viable problem-solving strategy (Mayo-Wilson and Montgomery 2013; Musiat and Tarrier 2014).

Considering the increasing financial pressure and scarce capacities of health care, particularly in underserved rural areas, widely cited advantages of online treatments (see Table 12.1) involve the cost-effective and convenient access to therapies, independently from time and region of

Fig. 12.1 Terminology for diverse and equal e-therapy types and delivery modes

Table 12.1 Roadmap for e-mental health services

New simple solutions for old complex issues? Hopes and concerns of patients and health professionals	
Potential benefits and hopes	New challenges and concerns
• Expanding the access to evidence-based mental health interventions, e.g., by closing treatment gaps in rural areas[1–3]	• Deterioration of health care by replacing conventional psychotherapy units with online self-help treatment services[1,5]
• Bridging time for patients waiting for conventional treatments[1,2]	• Poor therapeutic interactions and relationships, unfamiliarity with the technology[1,5,6]
• Supplying treatments at lower costs[1–4]	• Usage of inappropriate, ineffective, or harmful online self-help services[1]
• New options for "consumer engagement" and participation[1]	• New and old barriers for underprivileged patients, e.g., demands on writing skills[1,5,7]
• Overcoming the stigma of mental illness with low-threshold, anonymous services[4]	• Confidentiality and data security issues[8–10]

References: [1]Lal and Adair 2014; [2]Musiat and Tarrier 2014; [3]Hage et al. 2013; [4]Klein and Cook 2010; [5]Apolinário-Hagen and Tasseit 2015; [6]Wangberg et al. 2007; [7]Conn 2010; [8]Bennett et al. 2010; [9]Gulliver et al. 2015; [10]Wells et al. 2007.

residence (Hage et al. 2013; Lal and Adair 2014; Musiat and Tarrier 2014; Moock 2014; Hedman et al. 2012). In addition, opportunities for anonymously reachable online services may comfort the access for some target groups by overcoming obstacles such as self-stigma (Klein and Cook 2010).

Table 12.2 Examples for iCBT programs varying in their delivery modes (degree of guidance)

Main delivery mode	Common features	Online program examples
Unguided iCBT self-help → e-/m-Mental health	Structured iCBT without therapist support as adjunctive treatment (e.g., via apps) or combined with online communities (peer-to-peer)	→ **"MoodGYM"**[1] → **"Deprexis"**[2]
(Therapist-) Guided iCBT → e-/m-Mental health	Structured iCBT with tailored support by an online-therapist or online-coach, usually via text messaging (e.g., chat or e-mail)	→ **"GET.ON"**[3] → **"Happy @ Work→**[4]
Videoconferencing psychotherapy (VCP) → Video-based therapy	Web-and video-based one-to-one psychotherapy using Web-cam and video-chat software, optionally including instant messaging	Provided individually by licensed psychotherapists via online platforms (with similar conditions to face-to-face therapy)

References: [1]Twomey et al. 2014; [2]Krieger et al. 2014; [3]Ebert et al. 2014; [4]Geraedts et al. 2013. The usual iCBT program-duration is at least eight weeks. For further information on programs: see websites of National Health Services.

In general, delivery modes of psychological services (see Table 12.2) correspond with acceptability concepts for e-mental health usage (Peñate and Fumero 2016). The delivery modes range from fully automated apps, guided structured self-learn modules to videoconferencing psychotherapy (VCP). For instance, VCP is less conveniently accessible than m-health apps, but more flexible in terms of therapeutic strategies and treatable psychiatric conditions (Backhaus et al. 2012; Moock 2014). The vast majority of e-mental health programs is based on principles of cognitive behavior therapy (CBT), usually termed as computerized (cCBT) or Internet-based CBT (iCBT). In contrast to iCBT, for other approaches like positive psychology (e.g., Trompetter et al. 2016), psychodynamic psychotherapy (e.g., Johansson et al. 2013), or informal online self-help formats, respectively, peer-to-peer communities (e.g., Ali et al. 2015), there are merely preliminary results on their efficacy and feasibility available.

Among iCBT approaches, the solidest evidence base from randomized controlled trials (RCTs) has been established for therapist-guided iCBT programs for the treatment of mild to moderate depression and some anxiety disorders, with effect sizes comparable to face-to-face CBT (Arnberg et al. 2014; Olthuis et al. 2016). However, overestimation effects due to selection bias (Sucala et al. 2012), relatively high dropout rates and non-adherence in several iCBT trials are challenging (Donker et al. 2013; Karyotaki et al. 2015), especially in terms of trials with primary care patients (Deen et al. 2013) and unguided online treatments (Twomey et al. 2014).

In contrast to promising study findings on the effectiveness and acceptability of several online mental health treatments, the rarely available data on the actual uptake and adherence to iCBT outside of trials turned out being mostly unconvincing (Fleming et al. 2016). Drawing this research-practice mismatch, understanding perceptions, hopes, and worries (see Table 12.1) that may be relevant for help-seeking persons' individual decisions for engaging with a specific e-mental health service appears to be essential to improve implementation (Musiat et al. 2014).

12.2 Bringing Light into the Black Box: Exploring Expectations, Perceptions, and Attitudes Toward e-Mental Health Interventions

Attitudes reflect the sum of affective, positive or negative appraisals to a psychological object on attributive dimensions such as "harmful-beneficial" (see Ajzen 2001, p. 28). Research findings suggest that perceptions and general views on self-help can play a crucial role in shaping attitudes toward self-help, which are associated with individual experiences with mental disorders, self-help, and searching for help in primary care, and with perceived control, helplessness, engagement, and stigma associated with traditional face-to-face treatments (Khan et al. 2007). Equivalently, personal experiences, preferences, and personality facets may be

particularly important for online self-help as well (Klein and Cook 2010). Regarding the clinical relevance, in a trial Boettcher et al. (2013) found out that the expectation toward online self-help predicted therapeutic outcomes and adherence. If these feature are as same important for help-seeking contexts and views outside of trials, is subject of the next section.

12.2.1 Insights into the Black Box of Users' Perceptions and Attitudes Toward e-Mental Health

As a reference to iCBT, whose basic principles stem from behaviorism, the term "black box" (see Fig 12.2) includes invisible inner human domains like intentions, which can be indirectly observed in actual behavior. The "C" in CBT reflects the cognitive component that has been added to behavioral therapy, respecting the insight of the "black box."

Applied to the uptake of e-mental health, attitudes and perceptions could be predictors of acceptability that can be support developers to provide persuasive and meaningful, respectively user-centered e-mental health services, whose effectiveness is not restricted to clinical trials.

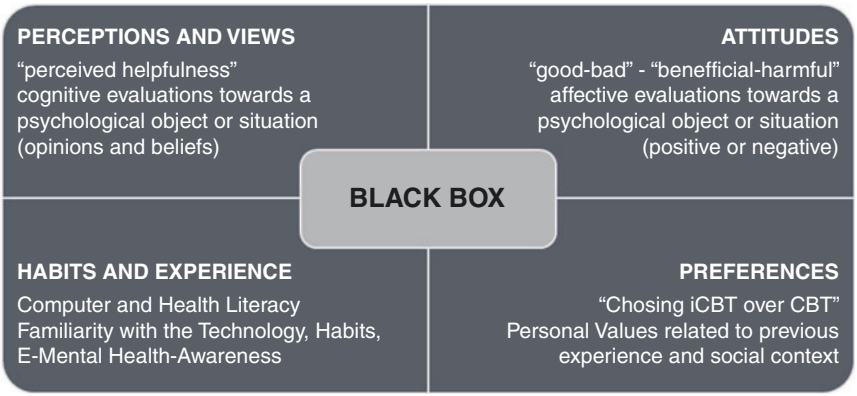

Fig. 12.2 Considerations on the "black of box" of e-mental health users

12.2.1.1 Technology Acceptance Meets e-Mental Health: "To Use or Not to Use?" Is the Question

As a framework for predicting intentions to use and actual usage behavior, the "Unified Theory of Acceptance and Use of Technology" (UTAUT; Venkatesh et al. 2003) has been applied to e-mental health, besides several other contexts. Considering the efficacious dissemination of e-mental health interventions, "theory base," "human support," "application fields," and "technical implementation" were identified as vital features (Lin and Baumeister 2015). Of the determinants of the UTAUT (Venkatesh et al. 2003), the determinant "performance expectancy," which includes perceived usefulness, relative advantage, extrinsic motivation, and outcome expectations, appears to cover key aspects for individual decisions in help-seeking contexts. Accordingly, several non-clinical surveys using community samples have employed "perceived helpfulness" as indicator for the acceptability of e-mental health services.

For instance, Oh et al. (2009) showed that perceived helpfulness of e-mental health services was positively associated with improved acceptability and intention to use online self-help treatments among young Australians. In another Australian study (see Klein and Cook 2010), over three-thirds of the 218 respondents of the online survey indicated a preference for face-to-face mental health services to e-mental health services in case of mental problems. In addition, those respondents who reported preferring e-mental health treatments ("e-preferers") scored significantly higher on "self-stigma" and perceived helpfulness of Internet-based programs without therapist assistance in comparison to "non e-preferers" (see Klein and Cook 2010).

Concerning associations between provision mode and perceptions on e- and m-mental health services, an online survey with 490 persons from the English general population by Musiat et al. (2014) revealed an overall lower acceptability of m-mental health apps compared to e-mental health programs, self-help books, and face-to-face treatments. Musiat et al. (2014) further showed that participants with a history of mental health problems reported the lowest likelihood of using m-health apps in case of mental health problems. Overall, participants perceived

traditional face-to-face treatments as significantly more helpful than online self-help treatments. However, previous use of health information websites was associated with improved views on online self-help. The findings both on preference to traditional services and positive associations with Internet usage are in line with another survey by Eichenberg et al. (2013), who used a representative, large sample (n = 2.411) of the German general population. Overall, a preference to traditional services was also confirmed in several other surveys (e.g., Casey et al. 2013; Choi et al. 2015). There is evidence that most persons are unaware of e-mental health options or use the Internet especially for health information (see Eichenberg et al. 2013), especially regarding elderly patients with good socioeconomic background (see Crabb et al. 2012). The aforementioned studies used self-developed questionnaires, but there are also studies using qualitative and mixed methods for subpopulations in community samples. For instance, Mar et al. (2014), who investigated preferences of young Canadians ("Generation Y") by using interviews, identified that participants were open to the idea of online self-help and that they preferred features like interactivity and support via an online community. Another example is a mixed-methods study using focus groups and an online survey (see Ellis et al. 2013) that revealed a preference of young Australians males for self-help to professional help as well as important features for the development of services for this target group.

To conclude, the presented findings suggest different degrees in acceptability depending on the surveyed target group, with improved acceptability rating among young and well-educated persons. Within survey using general population samples, a mostly low acceptability and willingness of future using e-mental health in comparison to traditional face-to-face therapies were found. Conversely, these studies were conducted years ago and thus it remains unclear if the ongoing dissemination of online programs has raised e-awareness and acceptability in the meantime or if assessments on e-mental health were affected by other factors. For instance, concerns about data security can be an obstacle to engage with online self-help services, especially among well-educated populations (see Bennett et al. 2010; Gulliver et al. 2015).

12.2.2 Improving Acceptability and Attitudes Toward e-Mental Health Treatments

Recent research findings indicated that psycho-educational information could result in improved acceptability and attitudes toward e-mental health. For example, in an RCT conducted with an online Australian population sample (n = 217), Casey et al. (2013) explored the impact of brief educational video and text-based information on attitudes toward e-mental health. While the text-based information significantly informed the willingness of future using in comparison to the video condition (two and a half minutes long) and the control condition, neither the text nor the video-intervention had an impact on the perceived helpfulness of e-mental health in comparison to the control group. In contrast to this, another RCT by Ebert et al. (2015) showed that a psycho-educational video on online psychotherapy (seven minutes long) provided to depressive primary care patients in Germany (n = 128) resulted in significant improvements regarding acceptability toward online therapy in comparison to the control condition (Ebert et al. 2015). Because both studies were comprised of different small samples and this research field is still at an early stage, these findings should be considered with caution.

Another next rationale step might be to educate and raise e-awareness among service users, but also among health professionals, especially regarding potentially biased views of therapists. In line with these considerations, Gun et al. (2011) showed that the surveyed 1.104 Australian professionals and 648 laypersons assessed online treatments programs as acceptable, especially when they have previously used such interventions. Moreover, concerns among health professionals should be addressed adequately as well. For instance, Wells et al. (2007) showed that the health professionals in their survey were concerned about confidentiality of client information. Another study (see Wangberg et al. 2007) revealed that attitudes toward online therapies among Norwegian psychologists were overall neutral, whereas psychodynamic-orientated therapists tended to rather express negative attitudes, including concerns about poor therapeutic relationships. Moreover, results of a qualitative study

(see Bengtsson et al. 2015) suggested that behavioral therapists viewed face-to-face CBT as a stronger experience than iCBT, especially with respect to the therapeutic working alliance, despite their generally positive views on online therapies. In accordance with this, Gun et al. (2011) recommended that program developers should make use of strategies for informing knowledge on e-mental health treatments and involving both therapists and patients in creating best-practice guidelines for a successful implementation of online interventions.

According to best-practice projects, involving key stakeholder can indeed increase commitment, trust, and positive attitudes toward e-health programs among relevant target groups (Van Gemert-Pijnen et al. 2011). For example, the person-based approach (PBA) can be applied to enhance acceptability and feasibility of digital health intervention by gaining a depth understanding of user needs, beliefs, attitudes, and their psychosocial context. For this purpose, the PBA combines both theory-grounded and evidence-based approaches to digital intervention development, including the usage of qualitative research and mixed methods to go beyond the mere assessment of acceptability, ease of use or usability, or satisfaction with e-mental health programs (Yardley et al. 2015). To conclude, there are several opportunities, but also many challenges to enhance the impact of e-mental health. By understanding the publics' and users' "black box," chances as well as challenges can be best addressed to improve the uptake and usefulness of e-mental health interventions in health care.

12.3 Discussion: Chances, Side Effects, and Challenges for the Digitalization of Mental Health Care

Appealing possibilities of overcoming regional, temporal, or psychological barriers (e.g., stigma of mental illness) via using the Internet to supply effective treatments seem plausible at first sight, though; wishful thinking of providers and researchers solely has yet been

shown to be insufficient to considerably affect actual uptake of online self-help treatments in mental health care. Regarding public views on the innovation "e-mental health," there should be several to-dos on the agenda of health professionals and researchers to not stay behind the expectations on improving the access to professional support for help-seeking individuals with mental problems through the Internet.

12.3.1 Current Perspectives and Limitations: Public Views on e-Mental Health

Concerning the diversity of proposed benefits of seeking help online (see Table 12.1), besides efficacy trials, interestingly few of these suggestions were tested in surveys. For instance, only few studies have investigated if online services are able to improve mental health-related help-seeking behavior among young individuals (Kauer et al. 2014). Although the Internet is increasingly used as "mental health advisor," outside of clinical trials, the willingness of using online self-help treatments was reported as relatively low by most respondents in general population samples (see Eichenberg et al. 2013). In addition, the potential of reducing self-stigma in general populations through e-mental health has been rarely investigated. Moreover, study findings appear inconsistent. For instance, while Klein and Cook (2010) showed that "e-preferers" scored significantly higher on "self-stigma" than "non e-preferer," results from another study by Crisp and Griffith (2014) indicated that survey respondents who were interested in participating in an e-mental health intervention reported a lower perceived stigma than those who were not willing to participate.

Furthermore, in surveys investigating perceptions of different e-mental health services, the majority of participants from general populations reported a clear preference of using traditional face-to-face-therapy to e-mental health treatments in case of mental problems (e.g., Crabb et al. 2012; Casey et al. 2013; Choi et al. 2015). In addition, study findings in community samples also suggested an overall lower perceived

helpfulness of online self-help treatments in comparison to conventional face-to-face therapies (e.g., Musiat et al. 2014). On the other hand, increasing awareness of e-mental health treatments by offering information may help to improve the readiness of future using e-mental health (Gun et al. 2011; Casey et al. 2013; Ebert et al. 2015). However, research data on acceptability and attitudes toward e-mental health outside of clinical trials is currently still limited. Additionally, some studies examining the likelihood of future usage of e-mental health in community samples did not use explicit measures on attitudes nor had their scope on acceptability issues (e.g., Crisp & Griffiths 2014; Younes et al. 2015). As a methodological limitation, most studies in the general population used self-developed surveys or grounded the rationales of their surveys solely on other research findings (e.g., Casey et al. 2013) or proposed or benefits of e-mental health (see Lal and Adair 2014), without giving a reference to theoretical framework like the UTAUT (see Venkatesh et al. 2003). In addition, the availability and awareness of e-mental health services differs broadly across national health-care systems (Moock 2014). Hence, the illustrated findings are whether neither definitive nor exhaustive, but instead cover research fields relevant to current debates.

12.3.2 Future Directions and Implications for Practice and Research

Due to the limited amount of large-scale high-quality studies, further research is required for conclusive recommendations. Currently, scoping reviews (e.g., Lal and Adair 2014) can though serve as a good starting point for health professionals to keep up with the newest developments to support their clients with a fundament for informed decisions. However, it remains yet unclear how the digitalization of mental health care will affect relationships and interactions in health care, including interpersonal contacts between professionals and help-seeking individuals. For instance, there is evidence that the therapeutic relationship might have a less relevant impact on the outcomes of online treatments than it has in traditional face-to-face therapies

(Andersson et al. 2012). Nonetheless, health professionals should be aware of the potential impact of health information websites on health behavior (Eichenberg et al. 2013).

Overall, applying participatory, collaborative, and PBAs from best practice e-health projects can enhance the quality of e-mental health research and implementation (see Van Gemert-Pijnen et al. 2011). For instance, PBAs using mixed methods can contribute to a deeper understanding of user perspectives, including mechanisms involved in the dissemination and implementation of successful e-mental health programs (Yardley et al. 2015).

In conclusion, the evidence base on the users "black box," including public views, perceptions, preferences, acceptability, and attitudes toward e-mental health self-help treatment services, remains fragmentary, but there are several promising approaches and concepts available and further efforts on the way to change this deficiency. Participatory approaches can offer the foundation for feasible and meaningful innovations in mental health care. Involving users a key stakeholder and increasing e-mental health literacy among both users and providers are likely to provide the best guidance on the question "to use or not to use" e-mental health self-help treatments and to improve the uptake of innovations within the process of digitalization of mental health care (Table 12.3).

Table 12.3 Roadmap for e-mental health services

Roadmap: *Investigating the black box of key holders toward e-mental health services*
• **Exploring psychological barriers for the acceptability of e-mental health:** Large-scale high-quality RCTs and studies using mixed-methods are strategies for a better understanding of psychological factors that are essential for a successful implementation and dissemination of e-mental health services.
• **Creating awareness and support shared decision-making:** Comprehensive, evidence-based information for different stakeholder groups can help the knowledge transfer and improve the impact of e-mental health services.
• **From conceptual patchwork to holistic framework:** Guidance for making digital interventions meaningful can be provided via the application and further validation of technology acceptance models, collaborative, participatory, or person-based approaches.

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