Original Article

Pre-clinical and post-clinical process of committing to e-psychiatric treatment—an evaluation of patient perspective with emphasis on designing cost-effective longitudinal treatment

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Background: e-Health is a branch of medicine, specializing in providing cost-effective care, using computer-based technologies. This study evaluates the patient-centered perspective on the process of committing to e-based therapies, emphasizing pre-clinical contemplation stage and post-clinical commitment to treatment stage.

Methods: We set up an online focus group. Participants (15 M, 15 F) were recruited through postings on health sites promoting e-health solutions. Each participant received login information and was asked to participate in a two-hour, moderated and recorded conversation with the principal investigator about the use of e-health solutions.

Results: The results stratify data into two stages of acquisition and processing information about e-health solutions: pre-clinical and clinical. In the pre-clinical stage, most patients are health information seekers, meaning that they seek to learn about e-psychiatric solutions as much as possible, comparing different treatment modalities. To accomplish this, they research health sites, discussion forums, and read review notes to evaluate the best course of action; Patients prioritize finding an easy and affordable solution that offers access to the qualified provider without the hassle of attending treatment in person. In clinical stage, patients devote time to understanding their interaction with the provider—they look whether the doctor is flexible in offering blended therapeutic approach; they will often tell the physician that they are concerned with cost of treatment, and believe that e-health solutions give them access to a dedicated provider when needed, which lowers the overhead cost of treatment. Once the patient is comfortable with his treatment planning, they establish commitment toward extended psychiatric care.

Conclusions: This study evaluated how patients decide on what providers to access when seeking e-psychiatric health solutions. We show that the cost of treatment and the provider's commitment to cost-effective, flexible e-health follow-ups predicts the patient's success of remaining in treatment long-term.

Keywords: e-Health; psychiatry; digital care; cost of care

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Introduction

In the age of technology, the Internet has become an established source of health information for millions of patients around the world. The number of individuals who rely on information found online to make health decisions keeps increasing year after year (1). Therefore, it is essential to understand how patients access health information, how

they process it, and what are the qualitative characteristics of online health advice that influence decision-making in real life.

Health information seeking behavior (HISB) is defined as searching for the health advice by conducting self-directed research in the literature, online, and through word of mouth (2). Google and similar search engines continue to be the most popular source of health information and advice, followed by social media (3). The use of specific online platforms to obtain health advice has been predicted to influence adherence to treatment for chronic illnesses, including HIV and diabetes (4,5). Therefore, it is important to note the utility of online platforms in propagating knowledge about the common diseases and disorders as well as management solutions.

Online HISB has garnered some skepticism among medical providers, who fear that searching for health advice online puts patient health in danger due to making poor treatment decisions (6). Furthermore, as patients become more informed about their health problems through an online search for health information, the traditional models of the patient-provider relationship and communication are threatened. Therefore, it is essential for medical providers to become comfortable with the idea that patients are becoming increasingly better informed about medical treatments and need to serve as a liaison between patient-centered care and connecting patients to appropriate diagnostic and treatment resources (7).

One of the most significant concerns regarding online HISB has been the reliability of information obtained online. Therefore, recent research has been concerned with determining patient satisfaction with the quality of health information collected online and to understand how it influences patients' decision-making to participate in specific treatments (8). Another concern regarding providing online health information and advice is that some patients might feel left behind without having access to appropriate information. For instance, in an increasingly digitalized life, many minority patients, especially the elderly, complain that they have poor outcomes when it comes to obtaining health information (9). Furthermore, the socioeconomic status of the patient determines their success rate in obtaining high-quality health advice from the Internet sources (10). Given all of this information, it is essential to understand how patients utilize online spaces to search for health advice, and how they use these data to guide their decisions concerning medical treatment.

Currently, we are experiencing the significant problem with expanding mental health treatments to all of the patients that need it (11). Frequently patients who suffer symptoms of psychiatric distress use the Internet to identify the source of their problems and hope to find medical treatment for it (12). Since the cost of mental health treatment can be high, patients are increasingly interested in alternative forms of therapy, like e-therapy or online support groups. The challenge here is that not all of the websites offering psychological support are reliably helpful to patients. Therefore, it is essential to establish a pipeline for connecting patients with mental health providers, who are willing to create blended treatment plans that decrease the cost of therapy (13).

This study

The purpose of this study was to investigate how people utilize the Internet to engage in HISB, and how the information identified through this search influences their decision to participate and mental health treatment. Moreover, we wanted to determine what factors influence the patient's decision to remain in treatment, paying particular attention to such aspects as the cost of therapy and the use of blended forms of treatment (provided via video-chatting, e-mail, text messaging).

Methods

Study population

Participants (15 M, mean age =31.4; 15 F, mean age =34.2), all from the United States were recruited through postings on health sites promoting e-health solutions. The data were collected at a single time point in August 2018.

Analytical pipeline

Each participant received login information and was asked to participate in a two-hour, moderated and recorded conversation with the principal investigator about the use of e-health solutions. Subsequently, conversation transcriptions were thematically tagged and analyzed using inductive reasoning, described by Glaser and Strauss (14).

Ethics

This study received institutional approval of the ethics committee.

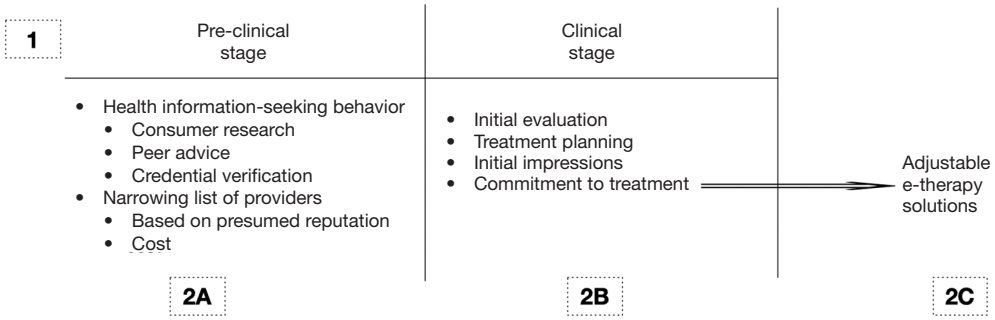

Figure 1 Summary of the main findings. e-Psychiatry in practice.

Results

Our analysis is divided into two stages of committing into participating in the e-health psychiatric health and prevention: pre-clinical and clinical (denoted as Point 1 in *Figure 1*).

Pre-clinical stage

In this stage, denoted as Point 2A in *Figure 1*, patients engage in the so-called HISB, characterized by targeted market research with the intention to identify providers that can help alleviate the uncomfortable psychiatric symptoms. There are several stages of doing this kind of review of available treatments. Over 95% of our participants reported that the search begins with typing in keywords related to signs and symptoms of common mental health problems into a search engine, preferably Google. Two-thirds of patients tend to use one, or two, words at most to reach greater saturation of query search results. A third of participants reported preference toward screening through mental health websites that explain their symptoms. Over 44% of participants prefer to screen through personal sites of individual providers to learn about the most feasible treatment plans. While the rest of the participants don't have a specific strategy to identify online resources. Instead, these individuals tend to look through multiple different websites, and preferably discussion forums or places like Yelp, to learn about what is psychotherapy, what type of people need this type of treatment, how long does the therapy last, and how much does it cost.

Once patients aggregate health information, they begin to contemplate whether psychotherapy is the right treatment for the symptoms. Nearly 79% of participants said that the cost of therapy is the single most important factor influencing their decision to participate in treatment. The second most important factor is the provider's credentials, where participants preferred to receive treatment from someone who has considerable experience, has appeared in the public media as an expert commenter, or is a social media influencer. The most critical factor influencing someone's decision to participate in treatment is peer advice.

During conversations with our participants, we learned that peer advice could come in various forms. Conversations with people online tend to be the most influential, followed by chats with close friends. What patients typically seek to identify is a narrow list of 4 to 5 providers whom they could financially afford to see and whose expertise is appropriate for providing treatment for the specific symptoms of psychiatric distress that they are experiencing.

Typical questions that prospective patients ask their peer network first are: how much does the therapy costs? Was this provider able to help you? Over 75% of our participants reported that the price and the personal opinion of past clients were the most significant factors influencing their decision to choose one provider over another. Nearly 24% of participants reported having a running list of potential providers they want to see, and they would use this reference tool to cross out any providers who are poor matches for their needs; prospective patients also keep track of all the questions they should be asking during an initial consultation.

In the final stage of selecting an appropriate psychotherapist, patients use the presumed reputation to pick the one person to see. What this means in practice is that prospective patients will look up the provider online and see what their website looks like, whether there is any feedback from past patients on Facebook groups or elsewhere, and some will even search places like the Google Scholar to see if their potential psychotherapist is scientifically accomplished.

When there's a tie between two potential providers, over 84% of participants said they were more likely to choose the provider who had at least one appearance in the media, like a lifestyle magazine or television show. The reason for using public media metric to select an ideal psychotherapist is that patients perceive these individuals as trustworthy by a greater public. A quarter believes that these providers have gone through some serious public scrutiny and are reliable, their credentials have been verified, and they are influential enough to be consulted as experts. Therefore, patients see these individuals as appropriate therapeutic matches. Less than 5% of participants reported feeling the need to verify the clinician's credentials when the provider was considered famous.

The last aspect of the pre-clinical search for an ideal provider is to figure out whether he or she offers e-therapy. While 37% of our participants were interested in participating in e-therapy only, over 63% wanted to have blended experience: e-therapy and outpatient office visits as needed. Technologically-savvy patients appear to want to experiment with e-therapy but, at the same time, they want to have a guarantee that their prospective provider owns a physical psychotherapy office (preference reported by 64%).

Clinical stage

In this stage, denoted as Point 2B in *Figure 1*, patients become selective about treatment planning in regards to what they have learned through health information obtained through HISB on the Internet and through a peer network.

It is those first impressions with the quality of interaction with a new mental health provider that predict the success of remaining committed to treatment by new patients. Generally, those patients who've had a good initial impression of their psychotherapist through the information they obtained online, and who have an excellent first-time consultation, are the most likely to remain in treatment for at least eight weeks (as self-reported, when asked about the length of staying in therapy). One of the best ways of creating a positive online presence cited by our participants was posting video blogs to allow patients to understand the provider's treatment philosophy, as well as learning more about their day-to-day routines.

Participants reported paying attention to the look and feel of the office, whether the administrative assistants were helpful and nonjudgmental, and the appearance of the healthcare provider. When all of the observations matched the expectations created through online health information seeking, over 90% of our participants said that they were ready to schedule another appointment the same day of the initial consultation. However, if at least one of the aspect of the first impression, like the look of the office, did not match up with initial expectations, 44% of participants said they were not willing to schedule another appointment with that same mental health provider.

For 78% of our participants, e-therapy started with an outpatient office visit first. The main reason is that prospective patients want to establish a working relationship with their therapist in person before commencing e-therapy. For about 12% of participants, the initial interaction with their therapist occurred online only, and 2/3 of these patients were likely to progress into scheduling another appointment offered online. Nearly 50% of participants want to have the option to blend their e-treatment with outpatient follow-up's from time to time (summarized in *Figure 1*, Point 2C). This requirement is especially important for patients needing pharmacological treatment.

When asked about what kind of the credentials predicted the patient's likelihood to choose either e-therapy only, outpatient therapy alone, or blended treatment: 54% of participants said that they wanted their provider to have a doctorate if participating in outpatient treatment only; meanwhile, over 74% of participants were willing to receive therapy from a non-MD/PhD provider if therapy was conducted exclusively online. Patients who had a preference towards blended approach (63%) were willing to work with two therapists if their MD/PhD therapist was only available for outpatient therapy, and someone with fewer credentials was available for online and outpatient treatment.

When asked about the influence of the cost of therapy on the process of choosing online *vs.* outpatient *vs.* blended approach, 82% of participants said that they were willing to see their provider through online approach only if it's meant to reducing the cost of therapy to under $100 per visit. Patients were willing to pay an additional average of $20 per visit when the provider offered a blended approach to treatment. Patients were also willing to pay an extra $10 per visit if the provider has advanced credentials like a medical degree.

We also ask patients how they felt about mixing up online therapy approaches to decrease the cost of therapy. Patients were given the option to discuss other forms of online treatment, like participating in moderated, closed discussion forum group therapy, or e-mail-based therapy, or text messaging-based therapy: 67% of participants said

that they were willing to forego video-based psychotherapy in place of e-mail/text/moderated discussion forum therapy as long as the cost of treatment was less than $50 a week. Over 57% of participants expected their mental health provider to be flexible with treatment options offered to patients. In practice, this means that patients wanted their providers to offer multiple modes of e-therapy follow-up, as long as it decreased the cost of treatment to under $100 per visit, or per week, whichever option turns out to be cheaper. Patients who were willing to pay higher premiums for treatment (over $100 per visit, or week, whichever option turns out to be cheaper) said they typically would prefer either outpatient or a blended approach only, without compromising with alternative methods of therapy. In other words, these patients saw utility in spending over $100 per visit when being able to interact with their provider for 60 minutes per visit fully.

Discussion

In this study, we explored how technologically-savvy patients engage in the HISB on the Internet to identify mental health providers. We also wanted to understand their attitudes toward various treatment options, such as blended psychotherapy, outpatient therapy only, video-based online therapy alone, and other alternative modes of treatment, including text messaging, moderated online group discussion, and e-mail. We identified two distinct stages of how patients make their decision to commit to psychotherapy: pre-clinical stage and clinical stage. The most important goal of searching for health information on the Internet is to identify mental health providers who have strong clinical skills and trustworthy reputation. Next, patients want to be able to work with providers who offer flexible treatment modalities. The main intention here is to decrease the cost of treatment. For instance, when patients have a budget of $100 per therapy session (or per week, whichever option is preferred), people are more willing to expect outpatient therapy combined with video-based follow-ups. For patients who cannot afford to pay $100 per visitor per week of treatment, they are more likely to seek therapists, who offer flexible treatment plans. These patients are willing to compromise spending less physical time interacting with the therapist (that is: chatting for 60 minutes via video or in an outpatient clinic) as long as the cost of therapy drops to below $50 per week. These data indicate that the cost of treatment is the single most effective predictor of how often the patients are willing to participate in psychotherapy. The most optimal pricing scheme for patients who had limited financial situation is to offer blended therapy approach (done mostly online via text messaging, e-mail, group therapy via moderated discussion forum) at the cost of $50 per week. Meanwhile, patients who can afford to pay over $100 per week or per visit are more likely to show the willingness to participate in therapy that involves mixed outpatient and video-based treatment that involves direct interaction with the provider for at least 60 minutes.

The method applied in this study, which involves interview of people who used the Internet to identify appropriate mental health providers, who offer blended modes of therapy, shows that we can learn effectively about how patients choose their therapy options based on the in-depth qualitative assessment. Our method of analysis was the qualitative evaluation of the interview transcripts, according to the principles of the grounded theory, developed by Glaser and Strauss. This approach allows us to infer a detailed understanding of how people in the digital age search for mental health providers. We can also understand what types of services patients expect from modern mental health clinics, especially when it comes to blended treatment options involving the use of online technologies. The study design was also ideal to understand to what extent the cost of therapy influences the decision-making process to continue therapy long-term.

The results of this study show that patients expect a variety of treatment modalities to justify the cost of therapy. Those patients who are more wealthy are more likely to prefer traditional outpatient therapy that meets once a week and is willing to compromise and participate in video-session as well, especially when they travel extensively for work. Patients who are less affluent are more likely to jeopardize with their treatment options as long as the cost of therapy drops below $100 per session or per week, whichever option is more desirable. Over 70% of our participants were willing to engage in blended treatment involving text messaging, e-mail, and moderated group therapy hosted on a discussion forum as long as the cost of treatment was below $50 per week. These findings indicate that for the vast majority of patients, it is not essential to spend the typical 60 minutes in therapy per week, or regularly scheduled session, as long as patients were able to maintain their treatment for at least two months.

The data are highly applicable to all mental health providers who are looking to retain as many patients in treatment as possible and are willing to compromise on the

cost by offering blended therapeutic solutions. In practice, this means that patients who can afford the regular pay rate of therapists can enjoy the full experience of a face-to-face outpatient and/or video-based psychotherapy. Meanwhile, those patients with limited budget should be offered traditional initial evaluation in the outpatient setting and should be enrolled in flexible online follow-up therapy. These options should include regularly scheduled asynchronous interaction with the therapist via text messaging, e-mail, group therapy administered through discussion chat. Consequently, because these alternatives to traditional, 60-minute talk-based sessions, do not involve intensive face-to-face therapeutic interaction—the cost of treatment should be significantly decreased to about $50 per week.

Through this blended therapeutic approach, psychotherapists can effectively manage their time by devoting office time to patients who can afford regular therapy; and help dozens of other patients in asynchronous modality by enrolling them into online treatment. Therapists should be transparent about their services, preferably by producing an information brochure that discusses in detail the different modes of therapies available in their psychotherapeutic practice and the justification of cost for each of these treatment plans. When patients understand what they're getting for the money, they are most likely to remain in treatment for an extended period.

This study has several strengths and limitations. First, the design of this study is well suited for determining how prospective patients evaluate mental health providers to participate in cost-effective psychotherapy. Second, the sample used to collect the data includes individuals, who use online spaces to obtain health information to make the informed decision about choosing the right treatment path. Third, the main focus of this research is unique in that it looks at the HISB in the digital age, and it describes in detail how patients factor in the cost of treatment in deciding in what kind of therapy they want to participate in, based on aggregating feedback online. The main limitation of the study is its small sample size as well as the mode of analysis. Qualitative analysis performed according to the standards of the grounded theory posits that the researcher analyzes the data in the "bottom-up" fashion. In practice, this means that the researcher establishes connections based on a mixture of subjective and objective impressions. Unlike quantitative analyses, the qualitative approach does not permit making causal associations. Nevertheless, this approach is optimal for the focus of our study.

Future research should continue exploring how people use online spaces to find mental health providers. We should also investigate in detail how the cost of therapy affects the patient decision-making to participate in treatment and to remain in treatment. It is also essential to understand how, in the age of technology, we can adapt traditional outpatient therapy for various psychiatric conditions for an e-therapy mode. We also need to investigate what are the attitudes of mental health providers towards digitalizing psychiatric treatments, so that we can create a collaborative environment where clinicians are willing to work on designing the next generation of treatments.

Conclusions

The purpose of this study was to evaluate patient-centered perspective on the process of committing to e-based therapies, emphasizing pre-clinical contemplation stage and post-clinical commitment to treatment stage. The results stratify data into two phases of acquisition and processing information about e-health solutions: pre-clinical and clinical. In the pre-clinical stage, patients engage in the so-called HISB, characterized by targeted market research with the intention to identify providers that can help alleviate the uncomfortable psychiatric symptoms. In the clinical stage, patients become selective about treatment planning in regards to what they have learned through health information obtained through HISB on the Internet and through a peer network. The most optimal pricing scheme for patients who had limited financial situation is to offer blended therapy approach (done mostly online via text messaging, e-mail, group therapy via moderated discussion forum) at the cost of $50 per week. Meanwhile, patients who can afford to pay over $100 per week or per visit are more likely to show the willingness to participate in therapy that involves mixed outpatient and video-based treatment that involves direct interaction with the provider for at least 60 minutes.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. This study received institutional approval of the ethics committee (No. 114/KDB/2017). Written informed consent was obtained from each participant for publication of this manuscript and any accompanying images.

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