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Digital Navigators to Implement Smartphone and Digital Tools in Care

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Abstract

While smartphone apps and other digital health tools have the clear potential to increase both quality of and access to care, actual successful implementation remains limited. Challenges often encountered in seeking to use apps in care include selecting safe/effective tools, spending clinical time troubleshooting technology instead of discussing health matters, and lack of time to check and review constant streams of data these digital tools can produce. In this 'From Research to Clinical Practice' piece we focus on how a new care team member, the digital navigator, can help overcome these barriers through conducting evidence-based app evaluation to help in selecting the right apps, troubleshooting technology outside of visits to improve the therapeutic alliance during, and finally summarizing digital data to facilitate clinical care that focus on actionable data.

Introduction

The potential of digital psychiatry, especially using smartphone apps to help patients with mental illnesses both remotely monitor symptoms and access interventions on demand, continues to expand [1]. Yet impressive pilot results of many app studies have not yet translated into clinical practice [2]. While there are several potential reasons for this challenge in translating promising research findings, including need for patient involvement in the creation and design of digital health tools, new payment model, better regulation of apps, and more – it is still possible today to help patients benefit from digital technology. In this 'From Research to Clinical Practice' piece we expand upon how a new auxiliary member of the care team called a technology specialist or digital navigator [3] can serve as the needed bridge and offer three clinical recommendations around the skillsets and duties necessary for success in this role. Drawing from the authors' clinical experience in becoming (HW) and training digital navigators (JT) we explore the clinical need, translational potential, and core skills required of a of the digital navigator. These include 1) evaluating and personalizing apps, 2) supporting technology use outside of visits to improve

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therapeutic alliance, and 3) safely interpreting and utilizing app data towards patient care goals as shown below in figure 1.

State of the Art

Recently there has been focused attention on the challenges of implementing digital mental health tools in care settings [4]. While patients are already using technology towards recovery [5,6] and meta-analysis suggest that apps do offer efficacy for conditions like depression [7, 8] and anxiety [8, 9] and large technology companies are entering the digital mental health space [10], these benefits remain aloof in actual clinical care settings. While published evidence of the real-world uptake and implementation of mental health apps is scarce, it suggests that such real-world use cases may even be unsustainable, limited, or more complex than planned [11,12,13].

One central reason that recent research has suggested a lack of transition is that insufficient acceptance from clinical staff is a core reason why technologies like apps are not adopted [14]. Diving deeper, there are additional contributing causes, including that digital device data rarely syncs with electronic medical records [15], and that many clinicians do not feel confident recommending [16] or using these new digital tools in care settings [17]. Recently the secretary for United States' Mental Health and Substance Use Administration stated that one the two priorities for the administration is "technical assistance to provider organizations that will help to ensure the modernization of the care and delivery of mental and substance use disorder services" [18].

Another central reason for this challenging translation draws from evidence suggesting a crisis around usability with digital health apps, especially in serious mental illness. While there are numerous reasons that most mental health apps suffer from low engagement [19], one fundamental reason is that many are challenging for patients to actually use. For example, a study of popular mood tracking apps found that those with depression reported difficulty both entering and accessing their mood data [20]. Another of a popular app for schizophrenia found that engagement quickly tapered and that despite being free, less than 50 people in the United States were using it consistently at the time of the paper [21]. In our clinical experience, we have found that while patients increasingly have smartphones, many may struggle to use their devices to their full potential. For example, we have worked with several patients who struggle to perform basic functions of a smartphone, including checking voicemail, clearing search history, or sending messages to loved ones. In fact, after teaching one participant how to access their voicemail, he found that his employer had left him several important messages that he had missed. Many clinicians are equally frustrated using app tools in care and lack of time and IT support are clear barriers [22]

Implementing digital navigators offers a solution to the both the clinician and patient challenges delaying the translational potential of digital health tools. The concept of a digital navigator, a new member of the care team who fulfill these above noted roles, was first proposed by Ben-Zeev et al. [23] and expanded upon by Noel et al. [3] although to date the training and duties of a digital navigator have not been fully defined. The qualifications of a digital navigator are flexible and can be decided upon to fit each site's needs. For example, a

digital navigator may be a young individual in their first job in the healthcare field, or the duties of the digital navigator may expand the duties of a more establish professional. We also note that a digital navigator need not only serve older patients (and clinicians) as in our clinical experience younger patients (and clinicians) equally seek support around using technology to augment care. The integration of the digital navigator into a clinical setting can vary depending on the needs of the site, including who the digital navigator serves and how they participate in clinical visits. The qualifications for the digital navigator position will thus vary between regions and cultures, while the duties and competencies, which we have compiled based off the literature and our personal experiences training and utilizing digital navigators, may be more universal.

From research to clinical practice

Recommendation #1. Digital navigators can help evaluate apps so that clinicians can pick apps with more confidence and work with patients around clinical treatment planning instead of searching for useful apps.

Clinical Case #1. A patient brings an app to a psychiatrist and asks if she could use it as part of care. The psychiatrist has never heard of the app and does not feel comfortable making a recommendation.

Digital Navigator Role #1. The digital navigator can be become an expert on those apps relevant to the clinic they work at and will have the time to keep up to date with the changing landscape of digital health. Using tools like the APA app evaluation framework [24, 25], which provides guidelines to evaluate available apps based on their security, evidence, and functionality, they can work to create a library of apps that are matched to the needs of local patients. Equally important, because they are very familiar with these apps, they can work with the patient after the visit to help the patient set up, navigate, and feel comfortable using the app. The extended example below underscores the need: seeking to lose weight, a patient wanted to use a popular diet app that has hundreds of thousands of downloads, but in searching for the app on the iTunes store she found numerous apps with similar names and logos that made it hard to find the correct one to download. On downloading the app, she realized she did not recall her iTunes password and had to find such before proceeding. Next her phone did not have the memory to install the app and she had to delete unused apps before proceeding. When installed she entered her breakfast into the app but was dismayed when the app told her she should not eat more today because her breakfast was 2,600 calories and that based on data entered, she could expect to lose weight in 2 years. On investigating this with the patient, she reported she only has cereal and milk for breakfast and was surprised. We looked at the app itself and found that she had entered 16 ‘gallons’ of milk instead of ‘ounces’ by mistake as the buttons were very small and once corrected, she felt relieved. With further hands on instruction, she learned to use the app and one week later reported she was finding it useful and motivating her to eat better. In this example we see that in downloading, installing, and using an app there can be numerous pitfalls that a digital navigator can guide a patient around.

Core Competencies Required #1: Understanding how to apply models like the APA app evaluation framework, ability to teach patients how to set up and use apps, ability to communicate with the clinical team.

Recommendation #2. Digital navigators can offer non-clinical support around app use between sessions to allow technology use to support the therapeutic alliance during appointments.

Clinical Case #2. A patient has been using an app for one week but is losing motivation to continue to engage.

Digital Navigator Role #2. The digital navigator can remotely monitor app use and offer non-clinical support for technical and engagement issues around the app. Based upon the technology being used, the digital navigator may monitor data collection between clinical visits, either to track the responses in real-time or ensure that data is still being collected and encourage engagement. Serving more as 'coach' in this context, they can provide encouragement towards treatment goals, motivation to stay engaged, guide patients through app exercise as needed and thus fulfill numerous aspects of the digital therapeutic alliance. Recent evidence suggests that this type of engagement may double the efficacy of apps for depression and anxiety [8]. As an example for monitoring apps, a patient was instructed to use a particular app to answer short surveys to report their symptoms on a daily basis. However, between their original visit where they were instructed to use the app and the next visit with their clinician, the patient had been logged out of the app accidentally. Unsure of how to log back into the app on their own, the patient was unable to use the app to report their symptoms. Therefore, much of the information between visits had been missed and hindered the ability of the clinician to observe any relevant trends for their in-person visit. Had a digital navigator been involved, she would have noted that data collection had stopped and been able to assist the patient with their technical difficulties to ensure that they were able to use their app properly. This allows the clinician and patient to use their appointment to discuss what the technology is revealing about mental health and not troubleshoot the technology itself.

Core Competencies Required #2: To ensure apps are used to increase the therapeutic alliance and add value to clinical visits, rather than becoming a burden, digital navigators must have the ability to trouble shoot simple technical app issues while possessing basic understanding of therapy skills towards fostering meaningful use and engagement.

Recommendation #3. Digital navigators can help interpret app data before clinical visits and highlight salient data features to both the patient and clinician in an easy to understand and relatable manner. In case of poor data quality or app use, they can help troubleshoot.

Clinical Case #3. A patient is returning for a one month follow up after using a mood tracker during this period. The clinician does not have the time to go to the portal where the app data is, download the data, learn to interpret it the context of the unique features of this apps, and still have time to discuss the clinical implications with the patient.

Digital Navigator Role #3. Immediately before the visit, the digital navigator would briefly meet with the patient to discuss the technology and observe for any data trends between visits. It is important to note that the digital navigator would not provide any clinical assessment but rather present potentially relevant data just as today a health assistant may present a summary of vital signs and weight during a primary care visit. The digital navigator can thus enable the patient and clinician to focus on the most salient data and its clinical meaning towards care rather than spending the visit trying to access and search through the data. For example, in our study we saw a patient whose smartphone data reported that she experienced more psychotic, anxiety, and depression symptoms on days where she had not slept enough the night before. The digital navigator met with this individual to review the app data before they met with the clinician. Upon identifying this relevant trend in their data, the digital navigator and client started the visit with the clinician together, where the digital navigator gave a summary of the data. Then, the clinician and patient continued the visit without the digital navigator and used sleep quality as a facet of the patient's treatment going forward.

Core Competencies Required #3. Ability to interpret app data and note trends. Ability to identify data trends concerning for safety risks. Ability to communicate effectively between the patient and clinicians. This role could also include basic interpretation of smartphone passive data for more advanced digital navigators.

Limitations

Limitation 1. The rapid pace of app changes and updates requires the digital navigator to regularly refamiliarize themselves with available apps on the app store.

Although there is potential for digital navigators to make a positive impact on clinical mental health care, there are some limitations. Firstly, because apps change and update rapidly, the digital navigator will have to remain active in scanning for updates and new developments in the app world. Thus, this would not be an ideal short term or temporary position. In addition to familiarizing themselves with as many apps as possible for recommendation, the digital navigator should be well-versed in the app evaluation criteria so that they are able to assess an app that a patient or clinician inquiries about.

Limitation 2. Although the digital navigator should be well versed in basic technical troubleshooting, there will be technical issues beyond the scope of the digital navigator's knowledge and abilities.

Next, it is possible that the patient or clinician will encounter technical difficulties that are beyond the scope of the digital navigator's abilities. Most of the technical questions for the digital navigator will center around how to use certain functions of the app or smartphone as opposed to technical malfunctions. For example, we are often asked questions including how to log into an app, how to navigate to a certain function, or how to log in with an Apple ID. However, occasionally there will be an issue that requires more assistance than the digital navigator is able to provide. These issues include malfunctioning smartphones, account ownership/access issues, and device compatibility concerns. In these cases, the digital

navigator would be able to direct the patient or clinician to the higher-level technical support that the require to resolve the issue.

Limitation 3. The digital navigator will have to base their data analysis around a variety of app features and engagement levels.

A further limitation includes identifying trends in the patient's data from the app based on the context of what features of apps are being used to what extent. For example, it is much easier to identify trends from an app that give a daily, weekly, or monthly summary of a symptom survey score versus an app that collects a free diary response that the patient writes in every day. Further, gaps in the patient's usage of the app could lead to difficulty drawing meaningful conclusions from their information. Therefore, the digital navigator must be cognizant of context of the data and able to follow protocols that will aid in interpretation

If there is insufficient information due to lack of usage, the digital navigator would then ask the patient why they did not use the app and potentially recommend a different one based on their discussion.

Finally, although we have identified several potential benefits of including a digital navigator on a care team, there are several factors to consider that are beyond the scope of this narrative. We have outlined above a potential role for the digital navigator that can be applied across a variety of healthcare systems and clinical settings. However, the nature of this position will vary based on the clinical needs, resources, technology infrastructure, and cultural factors at hand. For example. These are important issues that require further consideration and most evolve in parallel with the digital mental health space.

Conclusion

This new auxiliary member of the care team, a digital navigator, can help translate the potential of digital mental health into clinical reality. Through offering assistance by applying evidence-based tools to evaluate apps, supporting the digital therapeutic alliance through troubleshooting outside of clinical visits, and facilitating data interpretation – the digital navigator can today help make digital health actionable for both patients and clinicians.

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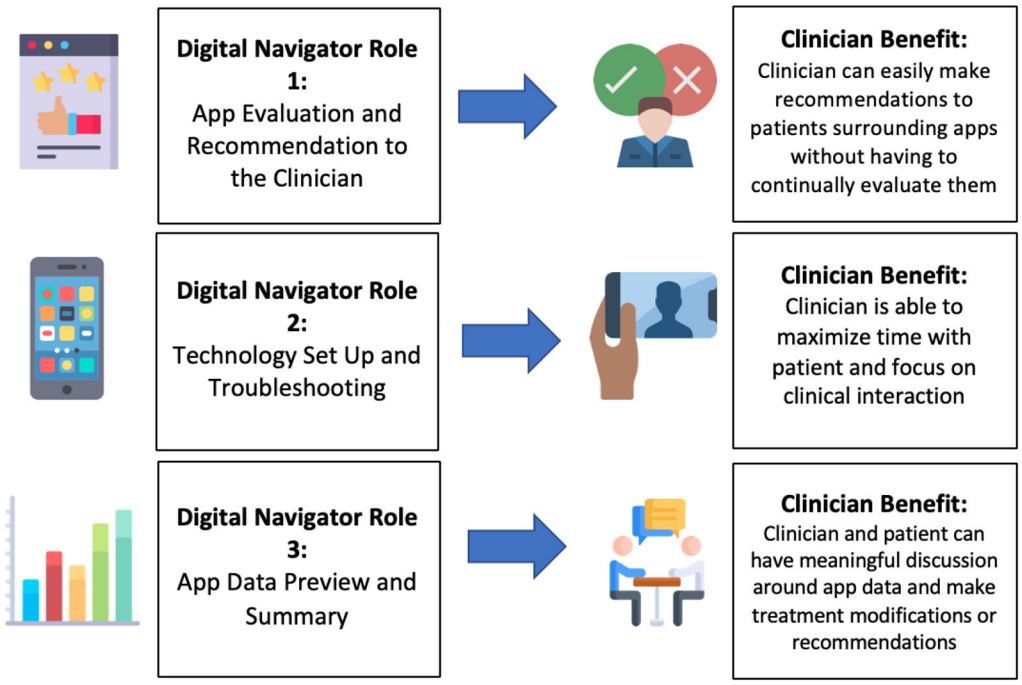

Figure 1.

A summary of how the digital navigator's role can aid the clinician and augment patient care.