

Accelerating the research-to-practice translation of eating disorder apps and other digital interventions: Commentary on O'Leary and Torous (2022)

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Abstract

Smartphone apps are increasingly being developed to address mental health problems, including eating disorders. Yet a review by O'Leary and Torous (2022) revealed the dearth of publicly available evidence-based apps for eating disorders, despite growing research in this area in recent years. The lack of publicly available evidence-based apps is problematic for society and reflects a gap in the research-to-practice translation of the advances that have been made through academic research in this area. We detail barriers that academic researchers face to such translation, including the lack of incentives and pathways for making these interventions available beyond the academic institutions in which they are often created. The effective translation of eating disorder apps, and other digital approaches, from research to practice will require new approaches, including bolstering successful and sustainable translation through partnerships across sectors, being more proactive toward research-to-practice translation, and designing more sustainable digital interventions. Harnessing such approaches can improve the availability of evidence-based eating disorder apps and other digital approaches. Additionally, academic researchers are encouraged to be advocates within their institutions and with funding agencies to find ways to better incentivize and fund these efforts.

KEYWORDS

apps, digital interventions, evidence-based, human-centered design, implementation science, research-to-practice, sustainability, technology-based interventions, translation

1 | INTRODUCTION

Over 80% of people who screen positive for an eating disorder have never received treatment (Kazdin et al., 2017). Digital (e.g., online/mobile) interventions can increase access to care and have demonstrated acceptability and effectiveness for improving symptoms of eating disorders, such as among college students with eating disorders (excluding anorexia nervosa) (Fitzsimmons-Craft et al., 2020) and

adults with bulimia nervosa and/or binge-eating disorder (e.g. Hildebrandt et al., 2020; Juarascio et al., 2021). These interventions have been designed and evaluated as standalone treatments and/or as adjunctive tools that are “blended” with other treatments. Although digital interventions are not a panacea treatment option for all people with eating disorders (e.g., as some individuals with eating disorders have medical complications that require more intensive care), the accessibility of digital interventions makes them an important option

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in the range of services for eating disorders that should be available, given the numerous individual and systemic barriers that exist for other (e.g., face-to-face) treatments.

Yet digital interventions that have demonstrated effectiveness or promise in academic research are often not accessible to those in need of services. O'Leary and Torous (2022) reviewed eating disorder apps that are publicly available in the app marketplace (i.e., via the iOS and Google Play stores) and in the published research literature. While their search had some limitations (e.g., there were differences in their search terms between their searches of the app marketplace and published research literature, and the authors acknowledged theirs was not a systematic review), their findings clearly showed a dearth of publicly available, evidence-based apps for eating disorders. The lack of available evidence-based apps in the app marketplace is problematic because this is commonly the first place many individuals go when they are looking for digital mental healthcare options. It also reflects a gap in the research-to-practice translation of the eating disorder digital interventions that have been evaluated in research studies. Promising advances in the development of digital eating disorder interventions have and are occurring in academic research settings, but individuals working in academic settings (hereafter referred to as "academic researchers") can face challenges in making digital interventions publicly accessible. In this Commentary, we detail reasons underlying this research-to-practice gap for academically-based, non-industry research on digital eating disorder interventions, and recommend strategies to accelerate the research-to-practice translation of evidence-based digital interventions for eating disorders.

2 | BARRIERS TO RESEARCH-TO-PRACTICE TRANSLATION

One reason many evidence-based digital interventions are not made publicly available after academically-based research studies are completed is the lack of incentives and pathways to do so for the researchers who are conducting these efforts. For one, most research grants primarily fund discoveries, not their translation or widespread dissemination. For example, in the United States, the National Institutes of Health only spent approximately 8% of its fiscal year 2021 budget on health services research, which encompasses dissemination and implementation science research, and allocated only about 4% to commercialization research through their Small Business Programs. Consequently, most academic research studies that support the design, development, and rigorous testing of digital interventions lack financial capacity to disseminate the intervention after the project ends. Even research that evaluates the dissemination and implementation of digital interventions in various service settings face challenges with sustaining availability of these apps after the research funding ends. This is because, unlike pharmaceutical drugs which may maintain a static formula, ongoing dissemination of a digital intervention typically requires rather substantial maintenance and improvements to the technology over time. Continuous maintenance or improvement efforts are needed to ensure these interventions remain

compatible with ongoing updates to the operating systems of the devices on which these apps function and also so that the interventions keep pace with users' expectations for the technology and apps they use. Such efforts require resources (e.g., software engineering) that are beyond the scope of the academic setting, effectively precluding apps designed in research settings to subsequently become publicly available and be sustained in the app marketplace without further resources. Further, many evidence-based digital mental health interventions include human support as part of their delivery, as literature has consistently shown that guided/coached digital interventions (e.g., supported by a clinician or paraprofessional coach) are more effective than self-help in both eating disorders and other areas of mental health. Funding to support the availability of personnel to deliver these services is challenging to sustain within an academic setting after a research project ends. Finally, most countries do not currently have reimbursement mechanisms for digital mental health interventions, which limits the business models that could be used to support these efforts. For example, lack of reimbursement makes it challenging for healthcare settings and individual practitioners to adopt and deliver eating disorder apps as part of their clinical service.

Another challenge for academic researchers is academic institutions' incentives for promotion and tenure. Typical metrics for hiring and promotion are publications and research grants, not necessarily the public availability of a product or public health impact (Beidas et al., 2022). This means that academic researchers can be disincentivized to engage in the activities that are needed to disseminate and sustain a digital intervention after a research project ends if doing so conflicts with their university's metrics for advancement. While universities are investing more in technology transfer, faculty commonly lack incentives to pursue such efforts, and there are not standard metrics widely in place for considering such efforts in decisions about promotion and tenure.

3 | ACCELERATING RESEARCH-TO-PRACTICE TRANSLATION

The above barriers make it challenging for academic researchers to, on their own, make evidence-based digital interventions publicly accessible. Yet because an inherent goal of research is to improve public health, the scientific efforts of academic researchers are ideally intended for impact. In this section, we recommend three strategies that could be used to accelerate the research-to-practice translation of evidence-based digital interventions for eating disorders.

To address the barrier that academic researchers have in disseminating digital interventions on their own after research funding ends, the first strategy is to bolster partnerships across sectors—academic research, industry, non-profit organizations, and/or statewide organizations and agencies. Unlike in academic research where the primary objective is to discover and empirically test innovations, outside sectors have an inherent goal of sustaining and growing the availability of services, making cross-sector partnerships ripe to pursue. For example, our research team has been successful in partnering with

commercial companies and non-profit organizations to make evidence-based, digital eating disorder services available, like offering digital screening through the non-profit National Eating Disorders Association and delivering digital interventions with companies X2AI (chatbots) and SilverCloud Health (guided self-help), as well as in collaboration with statewide groups with government funding. Those developing these tools within industry could also be proactive in their evaluation of their tools, via an in-house research team or external academic research partners, and making these data available within the published literature.

These partnerships have varying advantages. Commercial companies can be useful partners for research projects if their product is or includes the digital eating disorder intervention that is being evaluated. This is because as a company, they would be focused on sustaining the digital intervention (likely irrespective of the research collaboration) so it could be delivered widely. At the same time, commercial companies seek to generate revenue, which can mean their company's goals, timelines, and ability to customize changes to a particular setting/context may differ from those of academic researchers. Non-profit and government organizations can also be interested in making evidence-based services widely available, and because their goal typically is not to generate revenue, they may have more interest in and flexibility to make such services available at low or no cost. The drawback is that these organizations can be more limited in the resources they have to pay for sustaining the service over time. There also are pathways for academic researchers to pursue their own dissemination ventures. For example, universities are increasingly offering resources to support academic researchers in commercializing their scientific discoveries. However, the challenge for academic researchers to pursue such efforts include a need to balance the demands of commercialization with other job responsibilities and the metrics for career advancement.

Given that evidence-based publicly available digital interventions for eating disorders currently are scarce compared to non-evidence-based apps, the second strategy involves proactive research-to-practice facilitation across sectors. Indeed, across sectors, individuals who are creating apps are encouraged to be more attentive to and creative in how evidence-based tools are made accessible and "searchable," such as in the app marketplace and in other publicly available settings. The review by O'Leary and Torous (2022) also highlighted the large discrepancy between publicly available apps that have versus lack research evidence to support their efficacy. As such, stakeholders in this area across sectors can advocate for the public app marketplace to provide greater transparency regarding which apps have an evidence base and which do not. For example, leaders in digital mental health have described the need for an evidence standards framework to be developed that guides the assessment of available digital tools based on effectiveness, usability, safety, equity, and to inform potential beneficiary decisions regarding the adoption of these tools (Mohr et al., 2021). Academic researchers can play a role in the development of such a framework, in its application, and in its evaluation. Following from that, it would be ideal if such a framework could be implemented in partnership with the companies that support

the public app marketplace (e.g., the iOS and Google Play stores), such as through badges or descriptor text that indicate each app's evidence ratings, so the public is informed about risks and benefits of the apps that are publicly available. Such an approach would likely require advocacy across sectors. More broadly, as technology advancements yield other evidence-based intervention delivery modalities to address eating disorders (e.g., virtual reality that may be available through devices such as Oculus, chatbots which may be available directly through SMS text messaging) that extend beyond the app marketplace, being proactive in monitoring the translation and ease of access to these tools will be important.

Lastly, because too often digital interventions designed in research studies fail to be successfully implemented in practice or made publicly accessible, the third strategy is to design more sustainable digital interventions, from their inception. For example, the aforementioned constraints for sustaining digital interventions related to technology maintenance and human personnel could prompt academic researchers and others to design and/or conduct research on interventions that are delivered using existing technologies and/or that utilize clinical support models that reduce or eliminate the involvement of human support (e.g., text messaging instead of face-to-face synchronous communication, chatbots). Designing for sustainment also can be bolstered by ensuring digital interventions are designed to fit into the day-to-day contexts of people's lives and the settings in which they are implemented. Ensuring these tools are accessible and beneficial when needed most will enhance the likelihood people will continue using them and therefore enhance the case for maintaining these tools publicly over time. The fields of human-computer interaction and implementation science focus on creating contextually relevant tools, and use methods (e.g., Graham et al., 2019) that centralize user perspectives, focus on designing for context, and embrace iteration over time to ensure interventions are used in the moments and contexts when needed most.

4 | CONCLUSIONS

The limited number of publicly available, evidence-based apps for eating disorders reflects an important gap. This is despite the promising advances that have been made in the development of eating disorder apps in academic research settings. With unprecedented growth in and reliance on digital solutions to address mental health, there is a public health imperative to ensure that the evidence-based tools that are created in research settings are made available to the public and that publicly available tools are evidence-based. These issues can be addressed through establishing more partnerships across sectors, being more proactive toward research-to-practice translation, and designing more sustainable digital interventions. Furthermore, academic researchers are encouraged to be advocates within their institutions and with funding agencies to find ways to better incentivize and fund these needed dissemination, implementation, and sustainment efforts within their settings.

AUTHOR CONTRIBUTIONS

Andrea Kass Graham: Conceptualization; writing – original draft; writing – review and editing. **Ellen E Fitzsimmons-Craft:** Conceptualization; writing – review and editing.

CONFLICT OF INTERESTS

The authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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