“I would love to have online support but I don't trust it”: Positive and negative views of technology from the perspective of those with eating disorders in Canada

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- Intersections between child maltreatment, eating disorders and eating-disordered behaviour View project
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INTRODUCTION

Eating disorders (EDs) such as anorexia nervosa (AN) and bulimia nervosa (BN) have significant physical complications including heart failure (Mehler & Andersen, 2010), psychological complications such as anxiety and depression (Zanetti, Santonastaso, Sgaravatti, Degortes, & Favaro, 2013), and social implications including stigma and social isolation (Dimitropoulos, Freeman, Domingo, Muskat, & McCallum, 2015; Levine, 2013). Both AN and BN have high lifetime prevalence rates, up to 1.9% and to 2.9%, respectively (Smink, van Hoeken, & Hoek, 2012), and high levels of treatment attrition (20.2%–51% in inpatient and 29%–73% in outpatient treatments) (Bandini et al., 2006; Dejong, Broadbent, & Schmidt, 2012; Fassino, Pierò, Tomba, & Abbate-Daga, 2009). Given the challenges in engaging individuals with this severe illness in treatment, it is important to examine novel treatment avenues as well as patient experiences to better inform clinical practice.

Technology is an area gaining clinical interest as it relates to ED treatment (Bauer & Moessner, 2013; Schlegl, Bürger, Schmidt, Herbst, & Voderholzer, 2015; Shingleton, Richards, & Thompson-Brenner, 2013). In this study, technology is defined as tools that can be accessed through computers, smartphones and internet (including social media/networking websites, applications, e-mail and text messaging). Overall, technology has the potential to impact individuals with EDs both negatively and positively. Thus far, research has focused on the potential impact of certain forms of technology, like the internet, websites and social media on ED behaviours and psychopathology. Individuals living with EDs may use technology to engage with pro-ED materials such as "pro-ana" and "pro-mia" websites, which are online resources and communities that glorify thinness while encouraging ED behaviours (Borzekowski, Schenk, Wilson, & Peebles, 2010; Norris, Boydell, Pinhas, & Katzman, 2006; Ransom, La Guardia, Woody, & Boyd, 2010). The use of these websites actively

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Abstract

This qualitative study aims to explore how individuals who are seeking help and support for eating disorders use various forms of technology. Fifteen participants, recruited from an Eating Disorder Program in a hospital setting and an eating disorder community support centre, voluntarily participated in focus groups and individual interviews in 2015. The authors used thematic analysis to code and analyse the qualitative data, and three themes were identified: safety, connection and technology development. This study identifies the need for technology use to be addressed and integrated into clinical services for eating disorders, as well as for safe and helpful technology tools to be developed for this population.

KEYWORDS
apps, eating disorder, Facebook, safety, technology
discourages treatment-seeking behaviours (Roulea et al. 2011). Similarly, studies examining the use of the social networking website Facebook have found correlations between Facebook usage and ED psychopathology, including increased weight and shape concerns and negative appearance comparisons (Mabe, Forney, & Keel, 2014; Meier & Gray, 2014; Walker et al., 2015).

When technology is used to support recovery, there can be positive outcomes for those with EDs. Chat rooms and message boards have been found to facilitate support and empowerment for individuals who seek help for their ED (Aardoom, Dingemans, Boogaard, & Van Fru, 2014; Eichhorn, 2008; Kendal, Kirk, Elvey, Catchpole, & Pryjmachuk, 2016; Ransom et al., 2010). A study that incorporated clinical feedback through text messaging into inpatient post-treatment for BN found that remission rates were significantly greater for those using the tool compared with those who were not (Bauer, Okon, Meeram, & Kordy, 2012). Furthermore, users and clinicians find smartphone applications that facilitate ED symptom monitoring to be highly feasible as a component of ED treatment (Darcy, Adler, Miner, & Lock, 2014; Juarascio, Goldstein, Manasse, Forman, & Butryn, 2015; Juarascio, Manasse, Goldstein, Forman, & Butryn, 2015). Recovery Record is an example of an empirically informed smartphone application based on cognitive behavioural treatment self-monitoring (Tregarthen, Lock, & Darcy, 2015). Early assessment of this application found that 42% of users were not actively accessing treatment and that users found the tool to be acceptable and feasible (Tregarthen et al., 2015). Despite these positive findings, researchers have expressed the need to be cautious of technology, as there are many tools that do not incorporate evidence-based treatment components (Fairburn & Rothwell, 2015; Juarascio, Manasse, et al., 2015; Juarascio, Manasse, et al., 2015; Loucas et al. 2014).

There is a call to action for greater research on the utility of technology from the perspective of those with EDs. Equally important, research is needed to better understand how technology may be used as an adjunct to ED treatment (Fairburn & Rothwell, 2015; Juarascio, Goldstein, et al., 2015; Juarascio, Manasse, et al., 2015; Loucas et al., 2014; Tregarthen et al., 2015). Therefore, this study aims to explore how individuals with EDs use various forms of technology, including what types of technology are used and if participants find technology to be a helpful or harmful tool as they engage in treatment or supportive counselling. With this, we aim to explore this population’s understanding of the potential benefits and challenges of technology. The authors also aim to begin discovering what is needed in technological development for individuals with EDs from the perspective of those who use technology.

2 | METHODS

2.1 | Study design

The authors chose a grounded theory qualitative study design, in which raw data drive the development of theory (Glaser & Strauss, 1999). Although this study does not aim to develop theory and aims only to begin exploring the topic of technology use among individuals with EDs, the data-driven theme development and the rigour used in data collection, including thematic saturation, make grounded theory an appropriate qualitative design for this study.

What is known about this topic

- Technology is an area of growing clinical interest in the field of eating disorders.
- Research demonstrates that individuals use technology as a resource for engaging with their eating disorders (e.g. pro-ana and pro-mia websites).
- Existing research shows mixed results on the integration of technology into eating disorder treatment.

What this paper adds

- Participants expressed concerns around safety when engaging with technology, including the presence and fear of harmful and problematic online materials.
- Participants spoke of their desire to use technology as a way to connect more easily with support systems.
- Participants identified recommendations for future technological development in eating disorder support and treatment.

2.2 | Participant recruitment

Research approval was granted through the University Health Network Research Ethics Board, and all participants provided written and verbal consent to participate in this study.

The inclusion criteria for participation were as follows: (a) individuals 17 years and older, (b) self-identify as having an ED and/or have received a DSM-IV-TR or DSM-5 diagnosis of an ED, and (c) have used technology to engage with recovery-oriented resources at least once while engaging in intensive treatment or supportive group counselling.

Some participants were recruited from a tertiary care hospital and were enrolled in an Eating Disorder Program (EDP) in Toronto, Canada. Participants in this setting received an ED diagnosis from a psychologist or psychiatrist. Participants were recruited from intensive inpatient (4–6 months of treatment) and outpatient (4–8 weeks of treatment) programmes. Recruitment was a voluntary sample of convenience; flyers containing study information were made available to all EDP patients and those who were interested contacted the study co-ordinator, at which point informed consent was provided.

Participants were also recruited from a community organisation in Toronto, Canada, focused on supporting those who self-identify as having an ED. The organisation provides support groups,
skill-building groups and workshops. The recruitment used in this organisation was the same strategy used in the tertiary care hospital. The research team did not assess participants in the community sample to confirm any self-reported ED diagnoses.

Participants were recruited from both hospital and community settings to discern if diverse opinions about technology use were present among those accessing differing levels of support for an eating disorder.

### 2.3 | Data collection

Two qualitative data collection methods were employed in this study: individual interviews (IIs) and focus groups (FGs). FGs were selected to highlight the similarities and differences across participant experiences that arise from the rich, group discussion (Kitzinger, 1995). IIs were used to accommodate participants who could not attend FGs due to scheduling conflicts. All participants attended an II or FG; in total, the research team conducted two IIs and five FGs. The research was conducted in a private room at the site where participants were recruited. IIs ranged between 30 and 45 min and FGs between 50 and 60 min. A semi-structured interview guide (Table 1) was designed and three members of the research team (A.B., G.D., V.F.) participated in conducting the IIs and FGs. Aside from the difference in time duration between IIs and FGs, there were no differences between the two data collection procedures.

All data collection was conducted in 2015. All IIs and FGs were audio recorded. The audio recordings were transcribed verbatim and anonymised by removing identifying information prior to analysis. Forty per cent of transcripts were randomly selected and checked for accuracy.

### 2.4 | Data analysis

To conduct the data analysis, the research team followed guidelines for thematic analysis set by Braun and Clarke (2006). First, each researcher independently reviewed all transcripts and took notes of general themes and ideas to become familiar with the data. Second, data-driven coding took place, which involved reading each transcript line-by-line and extracting common words and sentiments within and across transcripts. Only codes that were found by all researchers were used in the next stage of analysis. Following the agreement of the codes to be utilised, the research team searched for broader themes across the coded data set by discussing which codes conceptually fit together, and then reviewed and refined the identified themes. In this process, the research team addressed discrepancies and only used themes that the team unanimously agreed upon. Finally, each identified theme was defined and named before being carried through to the reporting phase. There were no thematic differences found between the hospital and community samples’ data.

A variety of methods were used to increase the validity of the findings (Elliot, Fischer, & Rennie, 1999; Fereday & Muir-Cochrane, 2006). A semi-structured interview guide was established to ensure consistent opportunity for discussion across IIs and FGs, while ensuring flexibility to capture differences between participants. With the use of IIs and FGs which provide rich qualitative data (Fusch & Ness, 2015), data collection was complete once thematic saturation occurred and no novel concepts were offered from study participants. Further, when developing initial codes, the analysis was conducted independently to avoid bias. Regular meetings were held to discuss emerging codes and only those with consensus were used in developing themes (Goodwin & Goodwin, 1984). Finally, analyst triangulation confirmed saturation (Glaser & Strauss, 1999) and validity of the results; the research team ensured that only themes found independently by each researcher were reported. This ensured that the study findings were found across multiple observations and accurately reflected the participants’ thoughts (Thurmond, 2001).

### 3 | FINDINGS

### 3.1 | Demographics

Fifteen individuals participated in this study, with 13 participants in FGs and two participants in IIs. Eleven participants were recruited from the hospital setting and four participants from the community setting. All participants reported a diagnosis of either anorexia nervosa (60%) or bulimia nervosa (40%). All study participants were female. Table 2 provides detailed demographic

### TABLE 1 Semi-structured interview guide

<table>
<thead>
<tr>
<th>Questions</th>
<th>Prompts for further exploration</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do you use technology tools in your everyday life?</td>
<td>Which technology tools have you used?</td>
</tr>
<tr>
<td></td>
<td>How often do you use them?</td>
</tr>
<tr>
<td></td>
<td>When do you use them most?</td>
</tr>
<tr>
<td>What has been your experience with using technology tools in relation to recovery from your eating disorder?</td>
<td>Do you find it overall helpful or unhelpful tool?</td>
</tr>
<tr>
<td></td>
<td>What could have made it better?</td>
</tr>
<tr>
<td></td>
<td>Do you think it works best in conjunction with other therapy models or on its own?</td>
</tr>
<tr>
<td>In what ways have technology tools influenced your recovery process?</td>
<td>How has it helped or not helped in the process?</td>
</tr>
<tr>
<td></td>
<td>Can you provide specific examples of how it helped or did not help?</td>
</tr>
<tr>
<td>What role has technology played in your recovery process?</td>
<td>Is the role positive or negative?</td>
</tr>
<tr>
<td></td>
<td>How have you conceptualised it as part of your recovery?</td>
</tr>
<tr>
<td>What components of the technology tools that you have used did your find helpful? What components did you find unhelpful?</td>
<td>Were there certain features that you found helpful or unhelpful?</td>
</tr>
<tr>
<td></td>
<td>Did using the technology tool is a certain way makes it more useful to you?</td>
</tr>
<tr>
<td></td>
<td>What could have made it better?</td>
</tr>
</tbody>
</table>
information of the participants in this study. As expected, there was a discrepancy between the number of participants in the FGs and the IIs. Each participant was given a unique code based on their experience: Community (C); Outpatient (OP); Inpatient (IP); Individual Interview (II); Focus Group (FG) and an ascending number based on the order of data collection. These codes follow each transcript excerpt.

Three major themes were identified from the study’s data. These themes include safety, connection and recommendations for future technological development.

### Table 2: Participant demographics (hospital and community samples)

<table>
<thead>
<tr>
<th></th>
<th>Hospital (N = 11)</th>
<th>Community (N = 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>27.9 (6.95, 19–45)</td>
<td>40.25 (11.41, 33–54)</td>
</tr>
<tr>
<td><strong>Age of onset</strong></td>
<td>13.7 (2.75)</td>
<td>12 (2.16)</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anorexia nervosa—Binge-purge subtype</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Anorexia nervosa—Restrictive subtype</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Bulimia nervosa</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Previous treatment</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td><strong>Living status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Birth family</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Partner</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>College</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>University</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td><strong>Comorbidity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Self-harm</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Suicidal</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Trauma</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Borderline personality disorder</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Trichotillomania</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Addiction</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Attention deficit hyperactivity disorder</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

*Previous treatments include hospital admissions to residential, inpatient or day hospital (outpatient) programmes.

### 3.2 Safety

Participants across all FGs and IIs discussed the importance of safety when using technology during intensive treatment or supportive group counselling. Three subthemes relating to safety have been identified: need to separate from technologies previously used, triggering material in general technology use, and navigating through pro-ED material to find recovery-oriented material.

#### 3.2.1 Need to separate from technologies previously used

Many participants spoke about how they used technology to maintain their ED by finding tips for engaging in symptoms, tracking calories and exercise, and connecting with communities that supported ED behaviours. Participants mentioned that when working towards eliminating their ED symptoms and behaviours, it was important to disengage from technology that promoted EDs. The following quotations from two of the participants describe this sentiment:

*When I get a message [from a friend online] ... often times, they want to talk about how sick they are, so that’s not helpful. Sometimes they get jealous about all the treatment I have had ... so I’m very careful. I don’t use a lot of social media anymore.* (IP II 2)

*If I’ve gotten into a lot of calorie counting, it’s just so easy to punch it in and all their websites come up. Part of my recovery is stopping that stuff; I’ve really cut back on my use.* (OP FG 3)

#### 3.2.2 Triggering material in general technology use

Participants mentioned that using technology can be challenging because content relating to weight loss, nutrition and fitness is commonplace on websites and social media. These materials can be perceived as triggering, which was identified as having the potential to increase emotional distress and/or urges for symptoms and other ED behaviours or thoughts, such as body comparisons and negative self-talk. One participant described her experience with feeling triggered: “It’s when I was feeling really distressed and I really, like I couldn’t or didn’t feel like I could talk to anyone else ... I felt pretty bad so I would go search it and I felt like I couldn’t get any more triggered” (OP FG 1). Two participants shared that experiences with triggering content have led to fear and avoidance of using technology:

*I try and avoid the internet because there’s so much triggering information on there. And every time I go to search something I always end up with something that’s*
negative and not positive, so I just have a hard time with that. (OP FG 3)

I find that all nutrition stuff, I don’t even want to look at anything nutrition wise on the internet cause everything is about weight loss and dieting and fat-free this and sugar-free that. So yeah, I don’t want to even attempt to look at any of that. (OP FG 1)

One participant stated that while being triggered was not a concern for her, she still found some materials problematic: “I’m not a very easily triggered person but I can recognize what’s inappropriate” (IP II 1).

3.2.3 | Navigating through pro-ED material to find recovery-oriented material

Participants mentioned that they find it difficult to access recovery-oriented resources and must navigate through triggering, pro-ED material to find these resources. Technology that is advertised as recovery-oriented was reported to often include content that contains triggering material (e.g. mention of weight, calories, symptoms, graphic pictures). Further, in some online groups and forums, there was a perceived lack of rules to facilitate a safe and non-triggering space. The following quotes illustrated participant’s challenges of attempting to find recovery-oriented resources:

I make sure I read everything carefully first. If I click on a website, I read the description, and then I kind of slowly scroll down to make sure if it’s triggering in some way. I’m just very cautious these days with it. And sometimes I’m avoiding it because I’m like okay, that’s not going to be helpful. (OP FG 2)

When I finally did acknowledge that [I had an eating disorder], I had the courage, strangely one night, to look up anorexia ... the first thing that comes up is a woman who not only encourages [eating disorders] but shows the benefits. That’s the top site that comes up, of how fantastic it is ... That broke my heart, and that took me longer, probably, to get legitimate help. (OP FG 2)

The final concern participants expressed was whether information presented on certain websites and forums was credible and reliable. Participants mentioned that it is very helpful when resources are recommended by clinicians or are explicitly produced or supervised by professionals in the ED field. One participant stated: “Many times my therapist has given me a website that’s positive ... It’s much better when it’s managed by professionals” (OP FG 3). Overall, participants were concerned about their safety when using technology and preferred tools that were clinician recommended.

3.3 | Connection

Participants identified social support as helpful when engaging in treatment for an ED and that technology like text messaging, e-mailing and Facebook can be used to facilitate these connections. Accessing support through technology is convenient (i.e. fast and easy to use) and provides comfort where face-to-face interactions may be anxiety provoking due to a tendency to experience social anxiety. One participant elaborated: “It helps me maintain connections; if I couldn’t text people and had to be face-to-face I probably would go a long time without talking to anyone” (OP FG 1).

Participants expressed that connecting for support through texting or e-mailing allows for the ability to articulate one’s message without becoming overwhelmed by emotions or social pressure:

I find e-mails really, very helpful to me ... In my family we have pretty intense emotions and we all need to settle when we feel emotional. If we’re on the phone or in person or something like that, the triggers are too quick; we may get very angry at each other and say things we don’t mean. When we [can have] 10 min to sit and think about it, then the difference is huge. So that’s been helpful. (IP II 2)

While participants value the ability for technology to facilitate connections with existing support systems, participants expressed a desire to connect with recovery-oriented communities, such as online support groups. One participant shared her experience participating in an online skill-building group:

I do participate in Facebook groups that are based on [dialectical behaviour therapy] ... there is a few that are really oriented towards skills and helping each other to use skills and I find that very, very effective. (C FG 1)

Alternatively, one participant reported that they avoid using technology to connect with any support, out of fear of their confidentiality being compromised:

I know whatever you look on your computer, on Facebook, on anything, is somewhere. It’s somewhere. If you want to learn about drug addiction, or you want to learn about anything, it’s—and then all of the sudden you get these messages saying, oh, you know, they, it’s tracked ... So it also makes you recoil, to know people are going to know that I’m just looking, I’m just interested. (C FG 1)

Participants identified technology as helpful in connecting them to their chosen support systems when social anxiety or interpersonal conflict would prevent face-to-face interaction. Further, participants expressed a desire to use technology to connect with other individuals with EDs to provide positive, recovery-oriented support.
3.4 | Recommendations for future technological development

Participants made suggestions for technology and the features and functions of technology that would be helpful to this population. Many participants advocated for meal support, which would include support with specific aspects of a meal plan, such as portioning and meal suggestions while in treatment. Further, technology that facilitates positive peer support during recovery was recommended. Finally, participants suggested tools that track recovery activities (e.g. activity monitoring, food risk lists) and provide practical coping strategies. The following quotes highlight these practical recommendations:

I was thinking I would love to go in and input ‘today I feel anxious and scared—I have a big event’ and it pops me up an activity ... but you can personalize it a little bit.  
(OP FG 2)

Sometimes I find that external person or whatever could just give me that extra little, you know, punch at the eating disorder when I need it ... like, ‘the eating disorder is telling you this, you know, but you need to do this.’ And then it’s just kind of getting that positive reinforcement and directive that, you know, what you’re going to do with this meal is the right thing.  
(OP FG 3)

Like something that would be for coping I think, coping with intense emotions ... like, click on this and here are some meditations you could do ... something that can give you in-the-moment support.  
(IP II 1)

For these tools to be useful, participants recommended features like customisability, convenience, easy-to-follow design and accessibility for different learning abilities. With several of the participants having past negative experiences accessing technology, they highlighted the need to guarantee that content would be safe and non-triggering.

Finally, some level of involvement from ED professionals was important. These participants wanted communication features with professionals, including feedback from a dietician in meal planning and communication with a therapist using technology. Regarding issues of safety, it was important for participants to ensure that any information provided on recovery-oriented tools be explicitly linked to an ED professional or reputable organisation.

4 | DISCUSSION

The aim of this study was to explore technology and its use from the perspective of individuals with EDs while they are engaging in intensive treatment or supportive group counselling. Clients with EDs are an underserved and vulnerable population (Cachelin, Striegel-Moore, & Regan, 2006; Gulliver, Griffiths, & Christensen, 2010; Standing Committee on the Status of Women, 2014); the development and integration of effective supports and treatments should be a priority in the field. Three themes emerged from the IIs and FGs with the hospital and community samples. First, participants described safety concerns with technology use in their daily lives; participants had previously engaged with pro-ED technology, and when trying to make positive change, it was challenging to navigate through triggering material. Second, participants shared that technology can be helpful in facilitating connection with their support systems, including family, friends and professionals. Finally, participants suggested numerous recommendations for future development of technology.

Multiple participants endorsed using technology as a tool to engage with ED behaviours. In a meta-analysis of the impact of pro-ED websites, characteristics such as body dissatisfaction, negative affect and dieting behaviour were found to be significantly higher in correlation with website exposure (Rodgers, Lowy, Halperin, & Franko, 2016). Further, over 70% of individuals on pro-ED websites were actively engaged in ED symptoms such as purging or laxative use, and as time spent on pro-ED websites increased, so did ED psychopathology (Peebles et al., 2012). It is clear from past research that engaging in pro-ED technology is not aligned with recovery or treatment. It may be that some individuals recognise the deleterious effects of engaging with pro-ED tools and actively try to minimise its impact when a more recovery-oriented mindset has been achieved.

When participants in this study considered transitioning their use of technology from pro-ED to recovery-oriented content, safety was a major concern. Participants spoke about the lack of safety on recovery-oriented tools, such as Facebook groups and online message forums. Previous research demonstrates that recovery-oriented resources often include discussions that are negative (Johnsen, Rosenvinge, & Gammon, 2002) in language and content that promote pro-ED ideologies, like the idealisation of thinness (Riley, Rodham, & Gavin, 2009). Research of recovery-oriented online message boards and forums recognises the importance of maintaining safety for users through the enforcement of rules and the moderation of content by professionals (Aardoom et al., 2014; Flynn & Stana, 2012; Kendal et al., 2016; Walstrom, 2000). Despite the issue of safety, participants highlighted that technology which facilitates connection with others, such as texting, e-mailing and Facebook, can be very helpful while engaging in intensive treatment or supportive group counselling for an ED. Some participants expressed that they experience social anxiety and isolation, which causes more traditional ways of communicating, such as face-to-face interactions and phone calls, to be challenging. Social anxiety is highly comorbid with EDs (Levinson & Rodebaugh, 2012), yet increased social support has been correlated with decreased anxiety and ED psychopathology (Wonderlich-Tierney & Vander Wal, 2010). Some participants use technology to facilitate connection with social supports and to support recovery-oriented behaviours, but there is difficulty with accessing these resources due to safety concerns.

Participants in this study shared various reasons why they preferred connecting with support using technology, including
convenience and the ability to reflect on one's message before engaging in communication with others. Literature in EDs has mentioned similar benefits of technology in this population (Kendal et al., 2016; Ransom et al., 2010; Sansone, 2001; Walstrom, 2000; Wesemann & Grunwald, 2008). A study of a recovery-oriented online forum showed that most of the site's activity was at night (between 11:00 p.m. and 4:59 a.m.) when traditional means of support were not accessible (Wesemann & Grunwald, 2008). Further, a 2014 Canadian report found that there is a stark lack of access to both community-based supports and treatment due to lack of funding, specialised professionals and awareness. Safe and effective resources are scarce, and the convenience and accessibility of technology have the potential to assist vulnerable individuals when they lack support.

The potential of encountering triggers when using technology was voiced to be a significant safety concern for participants, and yet, there was still a strong desire to find ways to connect with others through technology. These seemingly opposite but interconnected themes parallel similar research findings. Most recently, Kendal et al. (2016) studied the use of online moderated forums by youth with EDs. Findings showed that peer support was a primary use of forums. Interestingly, the study found that participants were cognizant of potential triggers, which was similarly identified as content (e.g. mentioning weight or food items) that could compromise a safe space for users, and aimed to remove or minimise their impact. This aligns with the findings in the current study, which supports that individuals searching for recovery-oriented tools are aware of triggering materials and actively work to avoid them.

The participants in this study generated a variety of recommendations for ways to develop and improve recovery-oriented technology. Participants advocated for practical support, including evidence-based practices (EBPs) such as meal tracking, cognitive behaviour therapy skills such as thought monitoring, and dialectical behaviour therapy skills such as distress tolerance. In previous research by Juarascio, Manasse, et al., (2015), they found a lack of EBPs within existing technology. Integrating EBPs has been recommended by both clinicians in the academic literature and clients attending intensive treatment or community support within this study. It is critical that this recommendation be integrated within future technology development for EDs.

Recommendations also included safety for users and absence of triggering material from recovery-oriented technology by integrating professional support and moderation. Custers (2015) recommended clinicians specifically assess clients for the types of technology they are accessing, the frequency and duration of their access, as well as their affect before, during and after technology use. Further, Fairburn and Rothwell (2015) found that smartphone applications for EDs need to be evaluated for their clinical utility. Olff (2015) explains that technology is developing and changing at such a fast rate that it is difficult to evaluate, which makes it challenging for service users to be aware of what is reliable and evidence-based. In our study, participants mentioned that the involvement of ED professionals in technology development would be helpful, as well as including features that allow communication with professionals and content that is linked to professionals or organisations in the ED field. In the mental health field, rules and regulations need to be developed to protect vulnerable service users (Karasoulis & Adams, 2014; Lal & Adair, 2014).

4.1 Strengths and limitations

While previous studies have researched the implications of technology for ED treatment, this study is the first to focus on the perspective of affected individuals. The research team also maintained significant attention to methodological rigour, as outlined in the Methods section. The study also aimed to recruit from hospital and community settings to represent a broader view of how technology is used within the ED population.

This study has several limitations. First, this study only interviewed those participants who were users of technology and did not examine the perspective of those individuals who do not use technology. Similarly, participants were recruited from study settings in a large urban area and the findings may not represent the perspectives of individuals from more rural areas, who may use technology differently due to the potential for increased isolation and lack of available services. The ED treatment history for the participants varied across the sample and may have had an influence on their perspective of technology. Additionally, confirmation of diagnoses in the community setting relied on self-report from participants. It is possible that these participants, while identifying as having an ED, did not meet the DSM-IV-TR or DSM-V diagnostic criteria for an ED. With regard to methodology, there may have been differences in the way participants shared their thoughts and experiences in FGs versus IIs. Although no differences were identified, it is not possible to confirm this due to the small number of IIs. Finally, the study sample was relatively homogenous with all female, college and/or university-educated participants (Table 2), which may not be representative of other demographics, including diverse ethnicities, socioeconomic classes and gender identities.

4.2 Future directions and clinical implications

Technology has the potential to close gaps in service provision, enhance treatment participation and stimulate behavioural change (Tregarthen et al., 2015). Participants in this study experienced technology as helpful, but noted that it was littered with safety concerns and triggering materials. Participants made a call to action for the development and integration of evidence-based, practical and professionally moderated tools.

As per the guidelines developed by Custers (2015), clinicians should begin asking clients what technology they have been or are currently using. Clients may be able to enhance the effect of useful technology and/or reduce the use of harmful technology with the aid of a clinician. For example, the use of a food diary app may be integrated into the therapeutic agenda with a clinician or the use of an ED forum may be discouraged if it contains misinformation or potentially triggering materials.
From the study’s findings, recommendations can be made for the development and enhancement of technology, including types of support, delivery features of support, and professional involvement. Another future research direction might involve using client-informed recommendations to design and evaluate recovery-oriented technology.

Future studies should expand on the current findings considering the strengths and limitations of the paper. To acquire a diverse perspective of this topic, future studies should conduct research that includes a varied sample of participants from different socioeconomic and cultural backgrounds. Second, exploring the professional perspective on technology before, during or after treatment would expand on the important discussion of the benefits and drawbacks of technology. Future studies are required to investigate the use of technology as an adjunct to intensive treatment.

5 | CONCLUSION

The findings from this study demonstrated that individuals who are engaged in intensive treatment or supportive group counselling for an ED had both positive and negative experiences with using technology. Technology can provide creative opportunities for connection with supports, while also presenting safety concerns to individuals who are working towards addressing their ED. The participants in this study provided recommendations for developing recovery-oriented technology, which is an area of future development and research. Additionally, the findings from this study highlight the need for clinicians to focus on technology use in practice. If clients are using technology to support them in their ED and in their recovery, it is an area of the environment that cannot be left unexplored by clinicians. Addressing the use of technology may be an important addition to treatment programmes. Study participants highlighted the significant impact of triggering material and asked for the support of professionals when navigating technology. Purposefully and conscientiously integrating this support into care practices is a vital step towards helping individuals with EDs.

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