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Horyzons USA: A moderated online social intervention for first episode psychosis

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Abstract

Aim: We evaluated the feasibility and acceptability of Horyzons, an online social media platform designed to facilitate relationship development among, and introduce therapeutic content to, first-episode psychosis (FEP) clients. We also evaluated whether participation in the platform was related to reduced loneliness, improved social integration and increased psychological well-being.

Methods: Twenty-six participants diagnosed with a schizophrenia spectrum disorder were provided access to the moderated Horyzons platform for 12 weeks. During the intervention period, participants were encouraged to access therapeutic content and social components embedded within the site. Participants were recruited from three first-episode coordinated specialty care clinics in North Carolina and assessed at four time points: baseline, mid-treatment, post-treatment and 1-month follow-up.

Results: Findings indicated that Horyzons was both feasible and very well tolerated, with a 92.3% retention rate and 79.2% of participants actively engaged in the platform. The most commonly identified personal strengths selected by Horyzons users were creativity (61.5%), curiosity (42.3%) and courage (38.5%). Feedback from participants indicated Horyzons could be improved by the development of a smartphone application, expanding the size of the Horyzons community and facilitating private messages between users. Preliminary results with engaged participants showed the greatest improvements in psychosis-related symptoms, followed by self-reported experience of negative emotions, depressive symptoms and loneliness.

Conclusions: This open trial found that Horyzons is both feasible and acceptable to FEP persons early in the course of illness living in the United States.

KEYWORDS

early intervention, first-episode psychosis, loneliness, social integration, social media

1 | INTRODUCTION

Recovery from mental illness is an evolving concept in the field of psychology, especially for individuals early in the course of psychosis (Roe, Mashiach-Eizenberg, & Lysaker, 2011). While common objective measures of recovery from psychosis include functional outcomes (eg, employment status) and symptom remission, subjective indicators of recovery include quality of life, perceived social integration and empowerment (Lloyd, King, & Moore, 2010). Social integration has become increasingly central to the conceptualization of recovery and well-being for people experiencing mental health issues, particularly for individuals with psychosis (Delman, Delman, Vezina, & Piselli, 2014).

Despite widespread interest in contributing to the community and desire to feel fully integrated in society, the vast majority (80%) of

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individuals with psychosis report persistent and impactful experiences of loneliness and social isolation (Badcock et al., 2015; Stain et al., 2012). Research suggests individuals with psychosis are five-to-six times more likely to experience loneliness than persons without a psychiatric condition (Meltzer et al., 2013). Results from the Survey of High Impact Psychosis (SHIP) indicated loneliness and social isolation ranked second on the list of challenges to recovery (Morgan et al., 2017; Lim, Gleeson, Alvarez-Jimenez, & Penn, 2018). Respondents also indicated stigma and fear of social situations prevented community participation among persons with psychosis (Stain et al., 2012), with the majority (69%) avoiding *all* social activities in the previous year (Morgan et al., 2017).

Deriving less pleasure from and feeling more threatened by in-person social situations may prevent individuals with psychosis from forming new face-to-face relationships or seeking additional support from current contacts (Schneider et al., 2017). Although persons with psychosis may benefit greatly from forming virtual connections with others (Alvarez-Jimenez et al., 2013), commonly used social media platforms may not be appropriate for use with this population. Specifically, intensified social media use may involve certain problematic features including exacerbated symptoms and possible rejection (Torous & Keshavan, 2016). In contrast, internet-based interventions that promote social connection as well as peer and professional supports may be promising tools for decreasing perceived social isolation in this population (Schlosser et al., 2018).

One such social media platform, Horyzons, was developed to promote continued progress toward recovery after discharge from a specialized mental health centre for first-episode psychosis (FEP) in Melbourne, Australia (Alvarez-Jimenez et al., 2013). Horyzons was designed to foster a sense of community, inclusivity and mutual support, which may reduce self-stigma, improve self-esteem and increase self-efficacy, thereby combating feelings of loneliness and promoting social integration (Alvarez-Jimenez et al., 2014). Preliminary findings suggest Horyzons is feasible, safe, acceptable and beneficial for recently discharged FEP clients (Alvarez-Jimenez et al., 2013). Despite the potential for supportive and therapeutic social media platforms to provide cost-effective support for clients transitioning to less specialized care, integrating therapeutic programs like Horyzons (Alvarez-Jimenez et al., 2018) into standard care for FEP is minimally implemented in the United States.

The current study aims to examine the feasibility and acceptability of Horyzons for American clients receiving care at three FEP clinics in North Carolina. We report preliminary results of a small, uncontrolled open trial of Horyzons, including: site usage information, changes in psychological health variables (eg, feelings of loneliness, depressive symptoms) and a summary of participants' feedback regarding the intervention.

2 | METHOD

2.1 | Participants and procedure

Participants were recruited from FEP CSC clinics in North Carolina. Sites included the Outreach and Support Intervention Services (OASIS) in Carrboro, Supporting Hope Opportunities Recovery and Empowerment (SHORE) in Wilmington and Wake Encompass in Raleigh. Each clinic specializes in early identification, individualized recovery and relapse prevention.

Inclusion criteria for participation were (a) ages 18-35; (b) no psychiatric hospitalizations in the last 3 months; (c) meeting DSM-IV criteria for a schizophrenia spectrum disorder; (d) maximum of five lifetime years of treatment with antipsychotic medication; (e) no current suicidal ideation or suicide attempt within the past 2 years; (f) not meeting diagnostic criteria for substance dependence; (g) estimated IQ > 70; (h) Internet access and (i) English language proficiency sufficient to complete assessments. Psychiatric diagnoses were collected from patients' healthcare providers, via chart review and/or through the psychosis, mood and substance use disorder modules from the SCID (First, Spitzer, Gibbon, & Williams, 2002).

Trained raters assessed participants at baseline, mid-treatment (6 weeks), post-treatment (12 weeks) and 1-month follow-up (16 weeks). The project was approved by the UNC-CH Institutional Review Board. Participants provided signed informed consent.

2.2 | Measures

Primary outcome measures included (a) participant use of and satisfaction with Horyzons, which were examined using site usage information (eg, number of logins) and self-report questionnaire (eg, perceived benefits/challenges of the intervention); (b) experiences of loneliness examined by the UCLA Loneliness Scale (UCLA; Russell, Peplau, & Ferguson, 1978) and (c) perceived social support and relationship quality measured by the Social Provisions Scale (SPS; Cutrona & Russell, 1987).

Secondary outcome measures included well-being measured by the 18-item Ryff Scales of Psychological Well-Being (PWB; Ryff, 1989), positive and negative emotions assessed by the modified Differential Emotions Scale (mDES; Fredrickson, Tugade, Waugh, & Larkin, 2003) and subjective self-worth measured by the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965).

Exploratory outcome measures included psychosis-related symptoms assessed using the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987) or Brief Symptom Inventory (BSI; Derogatis, 1993); depressive symptoms examined by the Beck Depression Inventory, Second Edition (BDI-II; Beck, Steer, & Brown, 1996) and social/occupational functioning measured by the First-Episode Social Functioning Scale (FE-SFS; Lecomte et al., 2014).

2.3 | Horyzons

Specific aspects of the Horyzons platform are designed to foster positive social connections among users, including “The Café,” where users can post content and comment on other users' posts; “Talk-It-Out” through which users discuss specific issues (eg, handling setbacks), receive support or suggestions and are guided through problem-solving steps; and “Team Up” where users track personal goals (eg, staying fit)

and share their progress. Horyzons also integrates therapeutic content from Cognitive Behavioral Therapy (eg, psychoeducation about the interrelatedness of thoughts/feelings/behaviours), Positive Psychology (eg, lessons on self-compassion and gratitude) and Mindfulness and Meditation (eg, mindful walking) that users can complete independently. Psychoeducational materials are divided into 17 "Pathways," each comprised of a series of related "Steps." All Pathways and Steps are related to coping (with difficult emotions, etc.), connecting (with others by boosting relationships, etc.) or enhancing (life by promoting happiness). To ensure language and content were applicable to American users, informal Australian expression and slang terms were replaced with equivalents in American English (eg, arvo//afternoon). An additional, optional component of Horyzons involves in-person "Meet-up" events (eg, bowling, playing board games).

Users were also paired with a Horyzons "moderator." Moderators were Master's level clinical psychology graduate students (n = 5),

TABLE 1 Participant demographic and clinical characteristics

	Active participants (*N* = 19)		Drop out and inactive participants[a] (*N* = 7)	
Characteristic	***n***	**%**	***n***	**%**
Phase				
Cohort 1	10	52.6	2	28.6
Cohort 2	9	47.4	5	71.4
Gender				
Male	12	63.2	7	100
Female	7	36.8	0	0
Race				
Caucasian	12	63.2	4	57.1
African American	6	31.6	3	42.9
Asian	1	5.3	0	0.0
Ethnicity				
Hispanic/Latino	1	5.3	1	14.3
Non-Hispanic/Latino	18	94.7	6	85.7
Diagnosis				
Schizophrenia	8	42.1	6	14.3
Schizoaffective	8	42.1	1	85.7
Schizophreniform	1	5.3	0	0.0
Psychosis NOS	2	10.5	0	0.0
Medication type				
Atypical	18	94.7	6	85.7
Typical	0	0.0	1	14.3
None	1	5.3	0	0.0
	Mean	*SD*	Mean	*SD*
Age (years)	25.16	4.05	24.71	2.29
Education (years)	14.68	1.42	13.57	1.62
Maternal education (years)	15.53	2.06	13.71	2.43
Paternal education (years)	15.94	2.92	14.33	2.66
Length FEP program (years)	3.13	2.55	1.71	0.76
PANSS (Trial 1—baseline)				
Positive total	13.50	2.68	12.00	5.66
Negative total	14.30	4.06	28.00	0.00
General total	31.50	6.49	39.50	7.78
Overall total	59.30	9.36	79.50	13.44
BSI (Trial 2—baseline)	47.67	37.27	46.40	31.77

Note: Samples did not significantly differ in any clinical or demographic characteristics outlined above.

Abbreviations: BSI, Brief Symptom Inventory; PANSS, Positive and Negative Syndrome Scale.

[a]Individuals who dropped out of the study (*n* = 2) as well as persons who did not meet the minimum level of engagement in the platform (*n* = 5).

Licensed Clinical Psychologist (n = 1), and Licensed Clinical Social Worker (n = 1) responsible for tailoring content to users' individual strengths and personal goals. Moderators contacted each user via phone within a week of induction to the platform. The purpose of the initial conversation was to introduce the moderator, explain their role and discuss the user's specific interests, goals and perceived challenges for using the site. For engaged clients, moderators sent personalized messages through the Horyzons platform weekly, which included content or activity suggestions. For inactive clients, moderators followed up with the client via text/call/email weekly or biweekly to discuss and problem-solve barriers (eg, forgotten password). Moderators encouraged client participation on the site through positively reinforcing comments (ie, praise, encouragement and support).

Moderators conducted daily safety checks, which involved reviewing posts automatically blocked by the system due to inclusion of "risk words" (eg, "death/dead/die/dying"). Any sign of risk (eg, posts about very low mood and suicidal ideation) was followed up by contacting users within 24 hours to provide support and assess risk. Moderators participated in weekly supervision calls with US Principal Investigator (DLP) to discuss client case conceptualization and address client concerns.

2.4 | Statistical analysis

Data analyses were performed using the Statistical Package for the Social Sciences (SPSS, version 24). Statistical significance was defined as $P < .05$. Descriptive statistics and percentages were used to determine feasibility and acceptability of Horyzons. Standardized change-over-time values were computed to assess potential within-subjects differences. Within-group effect sizes are reported for changes between baseline and mid-treatment, post-test and follow-up. To examine the extent to which different components of Horyzons usage were associated with improvements in outcomes, we computed correlations between Horyzons usage information (eg, number of steps taken) and changes in outcomes between baseline and post-treatment.

3 | RESULTS

3.1 | Participants

Twenty-four participants (92.3%) completed all research assessments. Participants included in the first cohort (n = 12) were recruited from a single clinic (OASIS) and were involved in the project from late 2016 to early 2017. The second cohort included participants from three clinics (OASIS, n = 5; Encompass, n = 3; and SHORE, n = 6) and accessed the platform from early to mid-2018.

Two participants were considered dropouts and were removed from the study due to incarceration or change of housing that precluded assessment completion. Participants endorsed relatively low levels of symptoms at baseline ($PANSS_{Total}$: M_{C1} = 62.67, SD_{C1} = 12.24; BSI_{Total}: M_{C2} = 47.21, SD_{C2} = 34.14). Participants in

TABLE 2 Horyzons acceptability and feasibility

Horyzons component *M* (SD)	All, n = 24	Active participants, n = 19	Inactive participants[a], n = 5
Horyzons usage information[b]			
Logins	32.88 (31.84)	40.00 (32.19)	5.80 (2.77)
Suggestions completed (%)	35.47 (33.30)	43.06 (32.81)	6.67 (14.91)
Actions	12.29 (46.31)	15.47 (51.86)	0.20 (0.45)
Comments	7.29 (12.07)	9.11 (13.01)	0.40 (0.89)
Talking points	1.08 (2.47)	1.37 (2.71)	0.00 (0.00)
Talk-it-outs	2.83 (4.37)	3.58 (4.65)	0.00 (0.00)
Steps	5.46 (6.98)	6.89 (7.19)	0.00 (0.00)
Posts	6.08 (9.79)	7.53 (10.57)	0.60 (0.89)
Total items[b]	35.04 (61.20)	43.95 (66.20)	1.20 (1.64)
Post-treatment feedback			
Total measure *M* (SD)	3.78 (1.07)	3.88 (1.07)	3.43 (0.96)
How easy was it to use HORYZONS?	3.96 (0.86)	4.11 (0.86)	3.40 (0.55)
How much did you enjoy HORYZONS?	3.54 (1.10)	3.63 (1.16)	3.20 (0.84)
How helpful was HORYZONS for you?	3.85 (0.90)	4.00 (.94)	3.40 (1.34)
How safe did you feel using HORYZONS?	4.17 (1.09)	4.37 (0.96)	3.40 (1.34)
How would you rate the quality of social interactions you had in "the café"?	3.67 (1.24)	3.79 (1.18)	3.20 (1.48)
How much did HORYZONS help you look forward to being with people?	3.50 (1.25)	3.37 (1.30)	4.00 (1.00)

[a]Persons who did not meet the minimum level of engagement in the platform only (n = 5); these analyses did not include study dropouts (n = 2).
[b]Total items refers to the number of site activities completed by participants (ie, sum of actions, comments, talking points, talk-it-outs, steps and posts).

TABLE 3 Within-subjects change in outcome variables (n = 19)[a]

Measure (visit)	M	SD	BL – MT	BL – PT	BL – FU
Primary			Effect sizes (d)		
UCLA (BL)	28.74	17.00	0.27	−0.01	−0.05
UCLA (MT)	24.21	15.68			
UCLA (PT)	28.84	15.66			
UCLA (FU)	29.63	17.22			
SPS (BL)	65.84	9.26	0.03	0.10	−0.18
SPS (MT)	66.16	9.26			
SPS (PT)	66.79	10.15			
SPS (FU)	64.21	6.29			
Secondary					
PWB (BL)	73.53	16.84	0.13	0.11	0.07
PWB (MT)	75.74	12.08			
PWB (PT)	75.37	10.40			
PWB (FU)	74.70	15.68			
mDES Pos (BL)	26.63	9.08	0.06	−0.03	0.12
mDES Pos (MT)	27.21	7.35			
mDES Pos (PT)	26.32	7.25			
mDES Pos (FU)	27.74	7.94			
mDES Neg (BL)	12.21	6.71	0.27	−0.19	0.27
mDES Neg (MT)	10.37	7.42			
mDES Neg (PT)	13.47	8.64			
mDES Neg (FU)	10.37	7.77			
RSES (BL)	29.58	6.85	0.07	−0.02	−0.15
RSES (MT)	30.05	5.55			
RSES (PT)	29.47	5.55			
RSES (FU)	28.53	7.49			
Exploratory					
PANSS total (BL), n = 10	59.30	9.36	—	0.81	0.65
PANSS total (PT), n = 10	51.70	7.67			
PANSS total (FU), n = 10	53.20	6.91			
BSI total (BL), n = 9	47.67	37.27	0.19	−0.01	0.08
BSI total (MT), n = 9	40.44	28.42			
BSI total (PT), n = 9	48.22	29.36			
BSI total (FU), n = 9	44.67	21.75			
BDI (BL)	13.84	11.33	0.30	0.04	0.14
BDI (MT)	10.47	9.44			
BDI (PT)	13.37	10.01			
BDI (FU)	12.21	10.02			
FE-SFS ability[b] (BL)	3.22	0.40	—	0.05	—
FE-SFS ability[b] (PT)	3.24	0.37			
FE-SFS behaviour[b] (BL)	2.93	0.41	—	0.18	—
FE-SFS behaviour[b] (PT)	3.00	0.38			

Notes: All Cohen's *d* values represent magnitude of the change based on standard deviations from baseline. Positive effect sizes reflect improvements whereas negative effect sizes indicate deterioration.

Abbreviations: UCLA, UCLA Loneliness Scale; SPS, Social Provisions Scale; PWB, Ryff Scales of Psychological Well-being; mDES Pos/Neg, modified Differential Emotions Scale, Positive/Negative Subscales; RSES, Rosenberg Self-Esteem Scale; PANSS, Positive and Negative Syndrome Scale; BSI, Brief Symptom Inventory; BDI, Beck Depression Inventory; FE-SFS, First Episode Social Functioning Scale.

[a]Active participants only included in above analyses.

[b]Composite score.

cohort 1 endorsed less social support than individuals in cohort 2 (SPS: M_{C1} = 61.90, SD_{C1} = 3.48; M_{C2} = 70.14, SD_{C2} = 9.84; t (22) = 2.52, P = .02). Cohorts did not significantly differ on any other demographic, clinical or outcome variables at baseline.

We defined minimal platform usage as an average of at least one login per week (12 total logins) and at least 10 instances of site utilization (eg, comments, talking points, etc.). *Active participants* (n = 19) reached or surpassed this standard, whereas *Inactive participants* (n = 5) did not reach minimum usage. At baseline, active participants endorsed less social support (d = −0.54) and increased positive (d = 0.48) and negative affect (d = 0.36) than inactive participants. Demographic and clinical characteristics of the sample are presented (Table 1).

3.2 | Feasibility and acceptability

Participants logged into Horyzons an average of 32.9 times (SD = 31.84; range: 3-134) over the course of treatment. Most participants found the site easy to use, helpful and safe. Inactive participants were generally less satisfied with Horyzons than active participants. However, inactive participants described Horyzons as more helpful in terms of looking forward to being with people (Table 2).

Written feedback suggested the most well-received aspects of the site were positive interactions with other users and the sense of community. Suggestions for improvement included creating an app accessible via smartphone, expanding the platform to include additional users and facilitating private messages. Additional usage information and feedback about Horyzons are provided (Table 2).

As identifying and promoting strengths is a core component of Horyzons, clients were asked to identify areas of strength they found personally relevant and meaningful during induction to the Horyzons platform. The most commonly identified strengths selected by participants were creativity (61.5%), curiosity (42.3%) and courage (38.5%). The least commonly identified strengths were self-control, social intelligence, teamwork and leadership (all 7.7%).

Steps completed by participants were most often acceptance-based or related to mindfulness and meditation. The most common steps taken were mindful thoughts and anchor yourself (both

TABLE 4 Relationships between usage and changes in outcomes (n = 19)[a]

Measure	Number of logins	% Suggestions completed	Actions	Steps
Social Provisions Scale	−0.33	−0.39	−0.20	−0.26
UCLA Loneliness	−0.41	−0.05	−0.02	0.01
Psychological well-being	0.64**	0.17	−0.13	0.09
mDES positive	0.44	0.03	0.19	0.22
mDES negative	−0.26	−0.05	−0.16	−0.28
Rosenberg Self-esteem Scale	0.29	−0.05	−0.05	0.04
PANSS total score, N = 10	−0.50	0.47	0.53	0.41
BSI total score, N = 9	0.47	0.53	0.39	0.28
Beck depression inventory	−0.34	−0.05	0.15	0.02
FE-SFS ability composite	0.32	−0.80	−0.19	−0.22
FE-SFS behaviour composite	0.34	0.03	−0.23	−0.27

Measure	Posts	Comments	TIO	Talking points
Social provisions scale	−0.14	−0.14	−0.29	−0.21
UCLA Loneliness	−0.31	−0.45*	−0.34	−0.31
Psychological well-being	0.61**	0.72***	0.57**	0.34
mDES positive	0.35	0.57**	0.46*	0.55*
mDES negative	−0.54*	−0.69***	−0.53*	−0.55*
Rosenberg Self-esteem Scale	0.38	0.43	0.29	0.26
PANSS total score, N = 10	−0.41	−0.49	−0.36	0.05
BSI total score, N = 9	−0.21	0.31	0.47	−0.08
Beck depression inventory	−0.52*	−0.62**	−0.53*	−0.34
FE-SFS ability composite	0.28	0.31	0.32	0.13
FE-SFS behaviour composite	0.62**	0.38	0.21	−0.01

Notes: Primary Outcomes: UCLA Loneliness Scale (UCLA), Social Provisions Scale (SPS); Secondary Outcomes: Ryff Scales of Psychological Well-being (PWB), modified Differential Emotions Scale, Positive/ Negative Subscales (mDES Pos/Neg), Rosenberg Self-Esteem Scale (RSES); Exploratory Outcomes: Positive and Negative Syndrome Scale (PANSS), Brief Symptom Inventory (BSI), Beck Depression Inventory (BDI), First Episode Social Functioning Scale (FE-SFS).

[a]Active participants only included in above analyses.

*P < .05.; **P < .01.; ***P < .001.

completed 10 times total), followed by being with difficulty, body and breath, and body scan (taken 7 times each). The most common actions (activities designed to reinforce strengths or practice new skills) completed were related to improving emotional experiences and preparing for jobs, including: being with difficult emotions (completed 12 times), body scan (completed 9 times), nailing the interview (completed 8 times) and how to write a resume and getting your public persona ready (each completed 7 times).

3.3 | Changes in outcomes

Five users were removed from subsequent analyses as they did not meet the minimum level of engagement. Thus, following analyses include engaged participants only. Regarding primary outcomes, reports of loneliness showed the largest improvement from baseline to mid-treatment (Table 3). Changes in participants' perceived social support and relationship quality were in the expected direction from baseline to mid-treatment and post-treatment, although modest and not maintained at follow-up (Table 3).

Negative emotions showed the greatest reductions with moderate changes between baseline and mid-treatment/follow-up. Participants' endorsement of negative emotions demonstrated small increases from baseline to post-treatment (Table 3). Involvement in Horyzons did not significantly impact the secondary outcomes of psychological well-being, positive emotions or self-esteem (Table 3).

Exploratory outcomes showed the strongest effect at post-treatment, with greatest improvements in psychosis-related symptoms. Small-to-medium effect size improvements in depressive symptoms were observed from baseline to post-treatment/follow-up. Finally, participants' self-reported social functioning indicated slight improvements (Table 3). Post hoc tests revealed the living skills ability and behaviour subscales evidenced the greatest improvement from baseline to post-treatment. Improvements were generally maintained but attenuated at follow-up.

3.4 | Effect of Horyzons usage on outcomes

Posting on the Café, commenting on others' posts and discussing an issue through the Talk-It-Out feature showed medium-to-high correlations with increases in psychological well-being and positive emotions as well as reductions in depressive symptoms and negative emotions (Table 4). Login frequency was significantly associated with improvements in psychological well-being for actively engaged participants. Actions completed, suggestions followed and steps taken were not significantly related to changes in outcomes (Table 4).

4 | DISCUSSION

This study provides preliminary evidence that Horyzons is a feasible and acceptable intervention for individuals with FEP in the United States. The overall retention rate across both cohorts (92.3%) indicated the intervention was well-tolerated. This finding was supported by participants' overall engagement and generally positive feedback about Horyzons. Preliminary results showed the greatest improvements in psychosis-related symptoms, followed by negative emotions, depressive symptoms and loneliness. Preliminary findings suggest active engagement in Horyzons was associated with enhanced social integration, improved psychological well-being, increased positive emotions, as well as decreased negative emotions and depressive symptoms.

To our knowledge, this is the first online, strengths-based, social networking intervention to have been successfully implemented with FEP in the United States. Work by Schlosser et al. (2018) recently demonstrated the feasibility and acceptability of PRIME, an online therapy intervention delivered via mobile app. PRIME was designed to target impaired motivation through goal-setting, achievement tracking and individualized coaching. Key features that distinguish Horyzons from the few extant online interventions for FEP include its emphasis on characterological strengths, integration in coordinated specialty care settings and use of a community of peers to reduce loneliness and improve social integration.

Emphasizing strengths may provide the kind of support and encouragement needed for young persons with psychosis to better cope with symptoms and make progress toward personally relevant goals (Browne et al., 2018). The breakdown of strengths selected by individuals in the current study corresponds well with endorsements from previous samples of FEP participants (Browne et al., 2018) and normative groups (Seligman, Steen, Park, & Peterson, 2005). The power of enhancing strengths was also evident in feedback received from Horyzons users. As one active user noted, "I found the Talk-It-Out section and the Café most helpful because they helped me gain clarity on who I am and what I stand for."

Notably, moderate reductions in experiences of loneliness, depressive symptoms and negative emotions were demonstrated after only 6 weeks of platform usage. As research suggests psychological well-being is closely associated with mental health recovery in FEP (Browne et al., 2017), the fact that the number of logins and social networking components of Horyzons were related to improved psychological well-being is striking. Although we cannot draw firm conclusions about the mechanism of psychological change brought on by Horyzons at present, this finding suggests mere exposure to the site may provide benefits even in the absence of engagement with therapeutic content (eg, steps/pathways) or prompted behaviour change (eg, actions). The current iteration of Horyzons precludes accurate recording of the frequency with which clients complete actions. Changes in clinical outcome variables may also be particularly encouraging considering this study recruited only stable outpatients currently receiving services at specialty care clinics.

Our findings also suggest different ways of engaging with the platform seem to be associated with improvements in certain outcome variables such as loneliness and depressive symptoms. It could be that active users who were self-directed and navigated the site independently and according to their preferences experienced

Horyzons as supporting their innate needs for autonomy, competence and relatedness (Ryan & Deci, 2000). It is also possible that users' decision to utilize social networking features of the site, such as posting and commenting on the café or discussing issues and receiving support in a Talk-It-Out, may have been key to facilitating changes in outcomes. As individuals with psychosis tend to feel less comfortable and more threatened in the presence of others (Schneider et al., 2017), Horyzons may provide a sense of safety and community that values inclusivity, non-judgement and support that may differ from other forms of social contact. Taken together, Horyzons, like most treatments, is not a one-size fits-all intervention.

Limitations of the current study include a small sample size and lack of a control condition. The correlational nature of this research also precludes our ability to infer causation about any observed changes in outcomes. Additionally, the short duration of this study as well as the relatively brief follow-up period prohibit our ability to draw firm conclusions about the reliability and sustainability of relationships between Horyzons usage and outcomes. As such, these findings should be considered preliminary. Moreover, assessments relied heavily on self-report questionnaires, which can be greatly impacted by recall bias and/or respondents' current emotional states (Michalska da Rocha, Rhodes, Vasilopoulou, & Hutton, 2018). Finally, the present findings should be interpreted with thoughtful consideration as outcome analyses included only individuals who reached a predetermined level of engagement.

Despite these limitations, access to a moderated and strengths-based social media platform such as Horyzons may provide unique treatment benefits and serve as a supportive adjunct to care for clients currently engaged in FEP treatment. Identifying individual characteristics and contexts that indicate which persons may especially need or benefit from this type of intervention merits further investigation. Future research should consider evaluating Horyzons in the context of a randomized controlled trial with the inclusion of a comparison group, which is currently underway at Orygen Youth Health in Melbourne, Australia (Alvarez-Jimenez et al., 2018).

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