ORIGINAL ARTICLE

Monitoring the effects of COVID-19 in emerging adults with pre-existing mood and anxiety disorders

Elizabeth Osuch[1] | Jazzmin Demy[2] | Michael Wammes[3] | Paul Tremblay[4] |
Evelyn Vingilis[5] | Chlöe Carter[1]

[1]Lawson Health Research Institute, London Health Sciences Centre, London, Ontario, Canada

[2]Department of Psychiatry and Behavioural Neurosciences, Offord Centre for Child Studies and McMaster University

[3]Department of Psychiatry, University of Western Ontario, Schulich School of Medicine and Dentistry, London, Ontario, Canada

[4]Department of Psychology, Faculty of Social Science, Social Science Centre, University of Western Ontario, London, Ontario, Canada

[5]Department of Family Medicine, The Western Centre for Public Health and Family Medicine, Schulich School of Medicine and Dentistry, University of Western Ontario, London, Ontario, Canada

Correspondence
Elizabeth Osuch, Lawson Health Research Institute, London Health Sciences Centre, FEMAP, 860 Richmond Street, London, ON N6A 3H8, Canada.
Email: elizabeth.osuch@lhsc.on.ca

Abstract

Aim: The COVID-19 quarantine closed many mental health services. Emerging adults with pre-existing mood or anxiety disorders were of concern for worsening symptoms. We sought to demonstrate a method for monitoring mental health status of a group of patients with reduced access to their usual mental health services during quarantine.

Methods: A total of 326 patients enrolled in the First-Episode Mood and Anxiety Program in London, Ontario, Canada were invited to participate in online questionnaires regularly. Patients were flagged for high level of risk based on depression scores, suicidal ideation and worsening in anxiety, depression or quality of health. All patients were also asked if they wanted contact with a clinician.

Results: One hundred and fourteen (35%) patients completed at least one questionnaire. Thirty were flagged based on scores; 37 (32.5%) participating patients requested help. Participants who were flagged for concerning scores were younger, more likely to be on the wait list for treatment, to have been laid off from work and have more functional impairment. Participants requesting support had higher symptom scores for depression and lower scores on quality of health.

Conclusions: The process utilized here identified patients at risk and in need of clinical support in the context of pandemic quarantine. It provided an accessible avenue for invited patients to communicate both symptom status and need for contact. Such a process can provide valuable monitoring during times when the usual communications between patients and health care providers is compromised and clinician time is limited. It is easily implemented.

KEYWORDS
adolescents, anxiety disorders, mental health services, mood disorders, quarantine, young adults

1 | INTRODUCTION

In many parts of the world, the COVID-19 quarantine involved closing mental health care services. In most of Canada, health care services were restricted to emergency and urgent care only, and then predominantly remote service. Quarantine has profound implications for mental health generally (Bo et al., 2020; Brooks et al., 2020; Cao et al., 2020; Li et al., 2020), and this global crisis is novel for North American emerging adults (EAs), who are inexperienced with widespread public health emergencies.

EAs with mood and anxiety disorders may be particularly vulnerable to the impact of this pandemic. They experienced high levels of

depression, anxiety, traumatic exposures and functional impairment prior to COVID-19 (CAMH, 2017; Osuch et al., 2019; SAMHSA, 2019). It has been unclear how EAs in mental health care would withstand physical distancing, unemployment, reduced daily structure, isolation and inactivity. Additionally, the increased risk of severe depression that can occur in pandemic quarantine may lead to an increased risk of suicide (Wang et al., 2020). There is a risk of coping via substance use or other unhealthy choices as well (https://www.ccsa.ca/canadians-under-54-drinking-more-while-home-due-covid-19-pandemic). Many avenues to promote social support and decrease boredom have been eliminated, which could increase stress.

The First-Episode Mood and Anxiety Program (FEMAP), integrated into the Ontario public health care system, allows 16–25 years old EAs with mood and/or anxiety concerns to self-refer, provided they have less than 18 months total lifetime psychiatric medication use, no primary substances use disorder and no prolonged loss of consciousness from brain injury (Osuch et al., 2015, 2019). The program uses a multidisciplinary, youth-friendly, person-focused model that has no predetermined time or usage limits and attempts to provide definitive treatment for patients at no personal cost. In the current study, we report the steps taken at FEMAP to provide monitoring and early identification of mental health care problems arising during the COVID-19 pandemic. Study goals were to determine if the methodology employed could allow EAs to quickly identify need for clinical contact during the pandemic quarantine without having clinicians initiate contact.

2 | METHODS

Patients were invited to participate starting on 15 April, approximately 1 month after Ontario instigated the COVID-19 quarantine on 17 March (MLHU, 2020). FEMAP in-person appointments ceased with quarantine and any contact with patients was restricted to emergency/urgent matters and only via telephone or video teleconferencing. This mandate remained in place on 15 April, when data collection began. Broader closures on that date included all schools, day cares, nonessential businesses and international border-crossings for nonessential travel. By 14 May Ontario reopened some outdoor businesses such as garden centres and restaurants for take-out only, but not schools, most businesses or international travel. By mid-May ambulatory mental health services were opened at a greatly reduced pace, with over 97% of contacts at FEMAP remaining online or via telephone. The requirement for virtual appointments to be emergency/urgent had been removed, but remained for in-person contact. By 12 June the provincial state of emergency was still in place and outdoor businesses such as restaurants (patios only) and beach access was open but subject to physical distancing. Gathering sizes of groups of people were restricted to 10. Physical distancing was mandated, schools remained closed and nonessential travel was discouraged. FEMAP in-person contacts with patients were still less than 90% of usual, but regular appointments continued in virtual format regardless of urgency. Data in this study were collected until 17 June.

2.1 | Participants

On 15 April, 312 EAs (age 16–27), 83 (26.6%) males and 229 (73.4%) females were in care or on the wait list for treatment initiation at FEMAP. This was defined as having had contact with FEMAP within the past 12 months and being identified by the clinical team as not having left treatment. These patients had enrolled in FEMAP between June 2014 and March 2020. Patients no longer under FEMAP care at the time of COVID-19 were not invited to participate. Participants were informed that the purpose of the study was to assess their levels of mental health symptoms, functioning and related experiences in light of the COVID-19 pandemic quarantine.

2.2 | Procedure

All willing participants signed electronic informed consent after the study was explained electronically in full, as approved by the Human Research Ethics Board for the University of Western Ontario, in accordance with the Declaration of Helsinki. The informed consent process and study data were all collected and managed using REDCap (Research Electronic Data Capture), an electronic data capture tool hosted at Western University (Harris et al., 2009). REDCap is a secure, web-based application designed to support data capture for research studies, providing (1) an intuitive interface for validated data entry, (2) audit trails for tracking data manipulation and export procedures, (3) automated export procedures for seamless data downloads to common statistical packages and (4) procedures for importing data from external sources (Harris et al., 2009).

Patients were invited to participate by both email and text message. Willing participants completed an initial set of questionnaires and were sent repeat questionnaires weekly until mid-May, and then biweekly. The original, longer version was repeated monthly and a shorter version was administered at the interval collection points (Table 1). Enrolment was ongoing so that participants joined on various dates over the timespan (Figure 1). Statistical analyses described here relate to data collected at each participants' initial timepoint only.

2.3 | Measures

All behavioural questionnaires were self-report and included: The Impact of Events-Revised (IES-R) (Weiss & Marmar, 1996) with instructions specific to the COVID-19 pandemic quarantine; the Montgomery-Asberg Depression Rating Scale, Self-Report (MADRS) (Montgomery & Asberg, 1979); the Sheehan Disability Scale (SDS) (Sheehan & Sheehan, 2008); the Anxiety Sensitivity Index (ASI) (Reiss et al., 1986) and the health-related quality of life measure, the EuroQol Group's EQ-5D Visual Analogue Scale (VAS) (van Reenen & Janssen, 2015). Additionally, we administered the Timeline Followback, related to alcohol, cannabis and other drug use (Sobell et al., 1996). Details can be found in Data S1, Supporting Information.

In addition to demographics of sex and age, questions were asked about employment including whether or not the participants had been

TABLE 1 Questionnaires and flagging criteria

Questionnaire	Thresholds for flagging patients
Impact of Events-Revised (IES-R)[a]	None
Montgomery-Asberg Depression Rating Scale, Self-Report (MADRS)	• Total score >17, indicating severe depression • Score on suicide question >2[b] • Worsening by 20% (5.5 points) from most recent score
EQ-5D[a]	• Worsening by 20% (20 points) from most recent score
Anxiety Sensitivity Index (ASI)[a]	• Worsening by 20% (14 points) from most recent score
Sheehan Disability Scale (SDS)	None
Timeline Followback (TLFB)	None

[a]Administered only on long form of the questionnaires.
[b]See Snaith et al. (1986). Score of 2 on the MADRS "Zest for Life" question corresponds to the answer, "I often think it would be better to be dead, and though I don't really want to commit suicide it does seem a possible solution." Scores higher than 2 indicate greater suicidal intent with the statement, "I am quite convinced that my only solution is to die, and I give a lot of thought to the best way to take my own life."

laid off from work or experienced a change in educational setting related to the pandemic.

Some questionnaire scores and changes in scores from the prior completion date initiated a "flag" or alert to the researchers. Flagging criteria are shown in Table 1. The MADRS total score cut point for flagging demarcates severe versus moderate depression (Snaith et al., 1986), and the suicidal ideation cut point was chosen by the clinical research team as the distinction between passive and active suicidal ideation (Table 1). Changes of 20% or greater in MADRS, ASI and EQ-5D were chosen arbitrarily to indicate a worsening that merited further inquiry. Participants with such scores received the feedback, "Your scores have indicated that you may be experiencing distress" and inquired if they wanted someone from FEMAP to contact them. Wording was chosen to provide maximum choice to participants. Additionally, at the end of each set of questionnaires even participants not flagged were asked, "Would you like someone from FEMAP to contact you because you feel you need urgent support?" If affirmative, preferred contact method was obtained (email, text, telephone). Patients asking for assistance (flagged or otherwise) were contacted by a research team member within one business day to inquire about what support they would like from the clinical team. Local community resources, crisis and talk line contacts were also automatically provided to everyone flagged or requesting contact.

2.4 | Statistical analyses

Analyses were conducted using SPSS, v.26. Statistical analyses consisted of independent t-tests for continuous variables and chi-square

for dichotomous variables. Because of the interest in early identification of patients in distress, we compared measures from only the first timepoint of all respondents who were flagged or requested contact versus those who did not on the measures of interest. This may allow for early identification of those at risk even before the times at which they are flagged or request help.

Bonferroni correction for number of tests in an analysis was used to reduce the Type I error rate to ≤5%. One participant was missing items at random on the MADRS and five were missing items on the ASI, which represented ≤15% of their items. Missing item scores for these individuals were prorated (i.e., individual mean substitution). Questionnaires with more missing data, and those not completed at all, were removed from individual analyses. The exception to this was the SDS: because many individuals were no longer at work or school related to changes initiated by the pandemic, if they left the work/school functioning item of the SDS blank then the existing two scores on the SDS were averaged and used for that value. If more than 2 of 3 scores were missing, the case was omitted from relevant analyses.

3 | RESULTS

A total of 114 individuals (36.5% response rate) completed the COVID-specific questionnaires at least once within the 2-month timeframe. Participants included 20 males (17.5%) and 94 females (82.5%). There was a sex difference between patients who chose to participate (chi-square = 7.490, df = 1, p = .004), with more females participating than males (41.0% vs. 24.1%). The mean age at time of initiating the study was 21.6 years (SD = 2.8, range 16–29). There was no difference in age between participants and nonparticipants (t = .073, df = 310, p = .942). There was no difference in mean age between male and female participants (t = .567, p = .572).

Prior to COVID-19, 15 (75.0%) male participants and 68 (72.0%) female participants were employed, with no significant difference between them (chi-square = .059, df = 1, p = .525). Fifty-three of 112 (47.3%) participants who answered the question indicated that they were enrolled in school before COVID-19 quarantine started. There was no difference between males (45.0%) and females (47.8%) in school enrolment (chi-square = .053, df = 1, p = .508). Fully 96.2% of these individuals experienced changes in the way they participated in school due to the pandemic.

Within 17 days of onset, 90% of eventual participants had completed their first questionnaire. Figure 1 illustrates participation across timepoints. Participants completed the questionnaires an average of 3.3 time (SD = 2.2, mode = 1, range = 1–7). Completion rate was bimodal with most patients completing only the first timepoint (Data S1).

Out of 114 participants, 30 individuals (26.3%) were flagged at one or more timepoints. Figure 1 illustrates individuals who were flagged and all individuals requesting support (with and without flags) across the duration of the study. Of these, nine (30.0%) declined contact at any time they were flagged. An additional 16 participants (14.0%) requested contact although they were never flagged based on scores. Thus, across the study there were 30 flagged individuals and

FIGURE 1 Depicts each subject at each time of questionnaire completion over the course of study. Subject numbers from 1 to 114 are on the *y*-axis and date is on the *x*-axis. Grey circles represent data completion with no flags or requests. Cyan circles represent flagged scores but decline in contact. Orange circles represent times when the participant requested contact with no flag. Magenta circles represent flagged scores with requests for contact
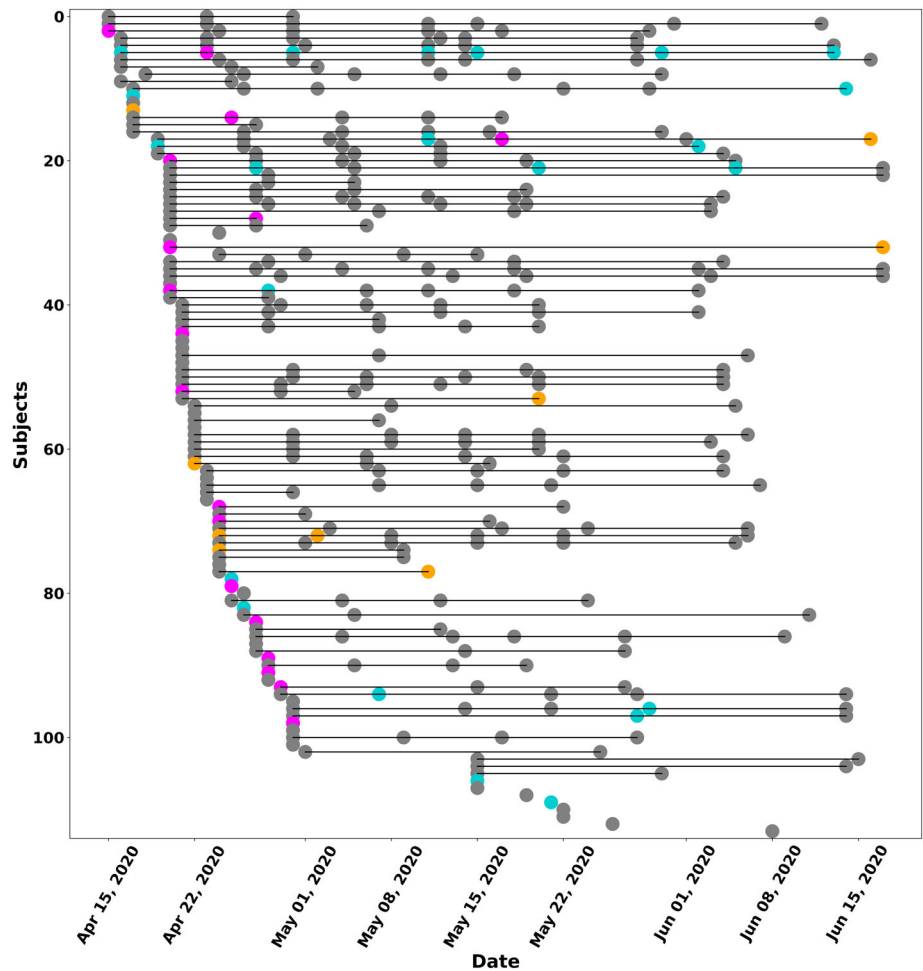
37 (21 flagged plus 16 not flagged; 32.4%) requests for contact. All but one of the flagged individuals was identified based on MADRS score(s) and the remaining individual was flagged based on a change in the ASI (yet declined contact).

Individuals on the wait list were no more likely to be flagged by high scores compared with those already in treatment (chi-square = 3.689, *df* = 1, *p* = .059). They were also no more or less likely to request contact (chi-square = .006, *df* = 1, *p* = .576), although numbers were small.

Of the 30 individuals flagged based on scores, 26 (86.7%) were flagged only at one timepoint; the other 4 were flagged between 2 and 7 timepoints each (Figure 1). Flagged patients who wanted support did so almost exclusively at the first timepoint they completed data, with only five individuals being flagged and wanting help later (three at their second set of questionnaires, one at the fifth, one at the seventh) (Figure 1).

Differences in measured variables at the first timepoint between those patients flagged and those not are shown in Table 2. Patients flagged on the basis of scores were younger and had worse depression and quality of life scores (which were triggers for flagging), as well as IES and functional impairment scores, than those not flagged.

Differences in measured variables between patients requesting contact with FEMAP, independent of whether or not they were flagged, are shown in Table 3. Depression score and quality of life were statistically significantly worse in those requesting help; cannabis use was also greater, but this just escaped statistical significance after correction for multiple comparisons.

Patients who were laid off or fired from jobs were more likely to have scores that were flagged (chi-square = 5.354, *df* = 1 *p* = .018), but not more likely to have requested support (chi-square = 1.201, *df* = 1 *p* = .197). School enrolment was not associated with whether patients were flagged due to symptoms scores (chi-square = .298, *df* = 1, *p* = .372) and was not associated with whether or not they requested support (chi-square = 2.675, *df* = 1, *p* = .076).

4 | DISCUSSION

We sought to examine the utility of an electronic outreach strategy in the context of the COVID-19 pandemic for a group of EAs with mood and/or anxiety disorders in treatment or awaiting treatment at FEMAP. This process has the potential for use in other clinical mental health care services globally in order to save limited clinician time, provided email contact information is available for patients. During this pandemic, with uncertain course over time and potential waves of

TABLE 2 Differences in initial scores between those who were flagged based on scores and those who were not; cases with missing data were excluded from each comparison

Variable	Flagged by scores (N)	Mean	SD	Statistic	p
Age	No (84)	21.92	2.79	t = 2.204	.030*
	Yes (30)	20.60	2.87		
Sex	No (84)			$\chi^2 = .943$	.402
	Yes (30)				
Variable	**Flagged by scores (N)**	**Mean**	**SD**	**t statistic**	**p**
IES	No (75)	28.41	18.76	−3.439	.001**
	Yes (27)	44.04	19.86		
MADRS	No (84)	9.79	3.76	−7.375	<.0005**
	Yes (30)	15.92	4.32		
ASI	No (84)	30.90	15.99	−1.696	.093
	Yes (30)	37.13	20.49		
SDS	No (82)	11.93	7.41	−3.185	.002**
	Yes (29)	16.72	5.48		
EQ-5D 0–100 scale	No (82)	60.32	19.86	3.966	<.0005**
	Yes (30)	43.47	20.05		
Substance use in days	**Flagged by scores (N)**	**Mean**	**SD**	**t statistic**	**p**
Cannabis	No (82)	6.52	11.65	−2.126	.039
	Yes (30)	12.30	13.11		
Alcohol	No (83)	2.81	5.66	.333	.740
	Yes (30)	2.48	3.97		
Other	No (20)	.85	3.35	−.831	.413
	Yes (10)	2.30	6.29		

Abbreviations: ASI, Anxiety Sensitivity Index; EQ-5D, health related quality of life questionnaire rating from 0 = worse to 100 = best health imaginable; IES, Impact of Events Scale; MADRS, Montgomery-Asberg Depression Rating Scale, Self-Report; SDS, Sheehan Disability Scale total score.
*Significant at $p < .05$; **significant at $p < .01$, Bonferroni corrected for five comparisons.

"lock down" where patient and clinicians are restricted from contact, this approach could have broad appeal.

We evaluated incidence of flagging based on symptoms, symptom changes and quality of health satisfaction scores and also requests for clinical contact both with and without flagging. Our results indicate that participation uptake in the study was moderate, and greater than that from a study of over 2000 youth in Ontario with or without a clinical connection to the requesting researchers (Hawke et al., 2020). Potential reasons for not enrolling in this study may have included lack of interest in completing questionnaires but also inaccurate text and/or email contact information. Because patients were identified as still in active care or awaiting care, we assume inaccurate contact information played a minimal role as an obstacle to participation. No clinician time was used in the context of data collection, so clinician time at FEMAP could be reserved for contacts where it was indicated and/or requested.

A greater percentage of females participated than males, which is consistent with higher rates of help-seeking in females generally (Jagdeo et al., 2009), or at FEMAP in particular (Arcaro et al., 2017).

Longitudinal follow-up dropped off substantially with each week of repetition of the questionnaires, potentially due to high participant burden but potentially also because any early contact met the needs of patients. Even later in the study, this process still identified patients with concerning symptom scores into their seventh completion of the questionnaires. Patients whose scores were flagged later in the time-frame tended to decline support when offered, as illustrated in Figure 1. This suggests that the process continued to have some utility in longitudinal follow-up, although perhaps less than on initial administration. By subsequent data timepoints EAs who asked for help previously may have been in regular contact with their clinical team. Details of completion over time may also have been affected by the fact that in the local area where the study took place the first COVID-19 pandemic wave was well-contained with no local crisis in hospital or medical care generally and was followed by a smooth but gradual lifting of quarantine restrictions over the course of the study. It is possible that both flags and requests could have accelerated if the pandemic situation had worsened over that time-frame, or during a subsequent wave of infection.

TABLE 3 Differences in initial scores between those who requested support and those who did not; cases with missing data were excluded from each comparison

Variable	Requested help (N)	Mean	SD	Statistic	p
Age	No (77)	21.57	2.94	t = .007	.994
	Yes (37)	21.57	2.71		
Sex	No (77)			χ^2 = .615	.307
	Yes (37)				

Variable	Requested help (N)	Mean	SD	t-statistic	p
IES	No (72)	29.18	17.86	−2.503	.014
	Yes (30)	40.96	24.06		
MADRS	No (77)	9.97	4.20	−5.146	<.0005*
	Yes (37)	14.38	4.46		
ASI	No (77)	30.99	16.12	−1.383	.169
	Yes (37)	35.78	19.67		
SDS	No (76)	12.22	7.18	−2.089	.039
	Yes (35)	15.27	7.07		
EQ-5D 0–100 scale	No (75)	61.20	19.76	4.101	<.0005*
	Yes (37)	44.86	19.96		

Substance use in days	Requested help (N)	Mean	SD	t statistic	p
Cannabis	No (76)	6.04	11.19	−2.448	.017
	Yes (32)	12.36	13.45		
Alcohol	No (77)	2.22	4.43	−1.260	.213
	Yes (36)	3.75	6.62		
Other	No (18)	.06	.23	−1.627	.132
	Yes (12)	3.25	6.80		

Abbreviations: ASI, Anxiety Sensitivity Index; EQ-5D, health related quality of life questionnaire rating from 0 = worse to 100 = best health imaginable; IES, Impact of Events Scale; MADRS, Montgomery-Asberg Depression Rating Scale, Self-Report; SDS, Sheehan Disability Scale total score.

*Significant at p < .01, Bonferroni corrected for five comparisons.

Patients who were flagged, which was triggered almost exclusively by the MADRS score triggers, were younger, showed more symptoms of PTSD and depression, had greater functional impairment and lower quality of life and were more likely to have been laid off from work than those not flagged. Patients requesting support had higher symptom scores for depression and lower scores on quality of health compared with those not requesting support. It is interesting that approximately a third of flagged patients declined contact. This could have been because they already had scheduled appointments upcoming, or it may reflect excessive sensitivity of the flagging criteria. Providing additional choice for contact saved clinician time in cases where flagged patients were not interested in contact. These results suggest that the procedure met its intentions to facilitate contact and communication between patients in need and the clinical team. It also suggests over inclusiveness of the flagging criteria, which is potentially beneficial in times of public health crisis. It appeared to have provided an avenue for participating EAs to communicate both their symptom status and their concerns and did not consume clinician time when patients either did not want or did not need assistance.

The process utilized here appeared to have appropriately connected patients more at risk and more in need of clinical support to clinical services early in the context of pandemic quarantine when in-person mental health services closed across the region and even virtual contact was restricted to those with emergency/urgent needs. It allowed the clinical service component of FEMAP to focus their clinical efforts where they were wanted and needed. Such a process can provide greater confidence that a mental health care system is directing their (restricted) efforts to where they are most needed and it can provide reassurance to patients that their well-being is an ongoing concern to the program. A similar approach could be used more broadly in other mental health care services, provided email addresses of patients were available.

Limitations of this study include rating scales that were self-report, although this is expected during a time when in-person contacts are restricted. There was no control group to compare with this group of EAs with diagnosed mood and/or anxiety disorders. Data from patients who declined to participate were not available to identify if their symptom scores and quality of health were substantially better than those participating. More females were enrolled in the study, which may reflect the greater numbers of females at FEMAP (Osuch et al., 2019) and seeking help for mood/anxiety challenges generally (Kessler et al., 2005). The quarantine experience is different from community to community, depending upon infection and death rates, course of pandemic progression over time, population density and a myriad of other societal factors, which need to be considered when interpreting these results.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Michael Wammes https://orcid.org/0000-0002-4934-8855

REFERENCES

Arcaro, J., Summerhurst, C., Vingilis, E., Wammes, M., & Osuch, E. (2017). Presenting concerns of emerging adults seeking treatment at an early intervention outpatient mood and anxiety program. *Psychology, Health & Medicine*, *22*(8), 978–986. https://doi.org/10.1080/13548506.2016.1248449

Bo, H. X., Li, W., Yang, Y., Wang, Y., Zhang, Q., Cheung, T., ... Xiang, Y. T. (2020). Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China. *Psychological Medicine*, 1–2 (Online ahead of print). https://doi.org/10.1017/S0033291720000999

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet*, *395* (10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

CAMH. (2017). *The mental health and well-being of Ontario students: Findings from the Ontario student drug use and health survey*. CAMH. Retrieved from www.camh.ca/osduhs

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, *287*, 112934. https://doi.org/10.1016/j.psychres.2020.112934

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*, *42*(2), 377–381. https://doi.org/10.1016/j.jbi.2008.08.010

Hawke, L. D., Barbic, S. P., Voineskos, A., Szatmari, P., Cleverley, K., Hayes, E., ... Henderson, J. L. (2020). Impacts of COVID-19 on youth mental health, substance use, and well-being: a rapid survey of clinical and community samples. *Canadian Journal of Psychiatry*, *65*(10), 701–709. https://doi.org/10.1177/0706743720940562

Jagdeo, A., Cox, B. J., Stein, M. B., & Sareen, J. (2009). Negative attitudes toward help seeking for mental illness in 2 population-based surveys from the United States and Canada. *Canadian Journal of Psychiatry*, *54* (11), 757–766.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593–602. https://doi.org/10.1001/archpsyc.62.6.593

Li, W., Yang, Y., Liu, Z., Zhao, Y., Zhang, Q., Zhang, L., ... Xaing, Y. (2020). Progression of mental health services during the COVID-19 outbreak in China. *International Journal of Biological Sciences*, *16*(10), 1732–1738. https://doi.org/10.7150/ijbs.45120

MLHU. (2020). Middlesex London Health Unit. Retrieved from https://www.healthunit.com/novel-coronavirus

Montgomery, S. A., & Asberg, M. (1979). A new depression scale designed to be sensitive to change. *British Journal of Psychiatry*, *134*, 382–389.

Osuch, E., Vingilis, E., Summerhurst, C., Demy, J., Wammes, M., & Arcaro, J. (2019). Process evaluation of a treatment program for mood and anxiety disorders among emerging adults: Preentry factors, engagement, and outcomes. *Psychiatric Services*, *70*(3), 211–218. https://doi.org/10.1176/appi.ps.201800219

Osuch, E. A., Vingilis, E., Summerhurst, C., Forster, C. I., Ross, E. E., & Wrath, A. J. (2015). Process evaluation of an early-intervention program for mood and anxiety disorders among older adolescents and young adults. *Psychiatric Services*, *66*(10), 1113–1117. https://doi.org/10.1176/appi.ps.201400256

Reiss, S., Peterson, R. A., Gursky, D. M., & McNally, R. J. (1986). Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. *Behaviour Research and Therapy*, *24*(1), 1–8.

SAMHSA. (2019). Substance Abuse and Mental Health Services: Behavioral health barometer (SMA-19-17-US). United States: Health and Human Services.

Sheehan, K. H., & Sheehan, D. V. (2008). Assessing treatment effects in clinical trials with the discan metric of the Sheehan Disability Scale. *International Clinical Psychopharmacology*, *23*(2), 70–83. https://doi.org/10.1097/YIC.0b013e3282f2b4d6

Snaith, R. P., Harrop, F. M., Newby, D. A., & Teale, C. (1986). Grade scores of the Montgomery-Asberg Depression and the Clinical Anxiety Scales. *British Journal of Psychiatry*, *148*, 599–601. https://doi.org/10.1192/bjp.148.5.599

Sobell, L. C., Sobell, M. B., Buchan, G., CLeland, P. A., Fedoroff, I., & Leo, G. I. (1996). The reliability of the Timeline Followback method applied to drug, cigarette, and cannabis use. Paper presented at the 30th annual meeting of the association for advancement of behavioral therapy, New York, NY.

van Reenen, M., & Janssen, B. (2015). *EQ-5D-5L user guide, v.2.1*. Rotterdam, the Netherlands: EQ-5D.

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, *17*(5), 1729. https://doi.org/10.3390/ijerph17051729

Weiss, D. S., & Marmar, C. R. (1996). The impact of events scale-revised. In J. Wilson & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD*. New York, NY: Guilford.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.