Wellnite: Facilitating Combination Therapy

Background

Depression and anxiety are treatable mental health conditions that are associated with increased morbidity and reduced quality of life. Nearly 8% of adults in the US report suffering from depression.[1] Over half of individuals with depression report some form of impairment to completing daily activities due to depression. Regarding anxiety, 19.1% of US adults are estimated to have had an anxiety disorder in the past year, with a further 31.1% of adults estimated to have had an anxiety disorder at any point in their lifetime.[2] It is not uncommon for individuals to be diagnosed with both depression and anxiety. In a study of 1783 individuals, 75% of those with depression met criteria for an anxiety disorder at some point in their lifetime, and 79% of those with an anxiety disorder met criteria for major depression at some point in their lifetime.[3]

Pharmacological treatment and psychotherapy are both recommended for the treatment of depression and anxiety. However, patients often encounter difficulties in obtaining integrated care and approaches to care remain fragmented. Patients presently face growing wait times to seek mental health care. A large survey found that nearly a quarter of US adults report having to wait a week or more to receive care.[4] A 2012 study showed that mental health appointment wait times for ages 18 and younger were an average of 7.5 weeks.[5]

Wellnite is a web-based service that aims to provide holistic care by providing timely appointments with behavior specialists, pharmacological treatment if needed, and chat-based therapy in an integrated mental health space.

We performed a descriptive analysis of a cohort of Wellnite users in order to assess Wellnite's impact on depression and anxiety.

Methods

We conducted a descriptive study of Wellnite users through an optional user survey to assess depression and anxiety from July 2019 to May 2020.

Study enrollment took place between July 2019 and January 2020 when individuals joined Wellnite's services. Upon enrollment, users were asked to complete the Patient Health Questionnaire (PHQ-9) and/or the General Anxiety 7-item scale (GAD-7) based on whether users reported previously seeking professional help for depression and/or anxiety, respectively. The PHQ-9 is a nine-item screening questionnaire for depression.[6] The PHQ-9 has a maximum score of 27 with higher

scores indicating more severe depression.[7] The GAD-7 is a screening questionnaire for generalized anxiety disorder. The GAD-7 has a maximum score of 21 with higher scores indicative of more severe anxiety.

Follow-up occurred from April 2020 to May 2020. Users were asked to complete a second PHQ-9 and/or GAD-7 during the follow-up period if one was completed upon Wellnite enrollment. Information regarding user demographics, antidepressant and anxiolytic use, medication side effects, prior psychiatric medication therapy, and chat function use was collected. Users were also provided free-text fields to provide comments regarding Wellnite use. Users who did not complete an initial survey upon Wellnite enrollment were excluded. Users who no longer had active memberships during the follow-up period were also excluded. All users consented to data collection and surveys.

Due to the anticipated small sample size, only descriptive analysis was performed. User characteristics for continuous variables were reported as averages with standard deviations. Severity of anxiety and depression, reported through PHQ-9 and GAD-7 scores, were compared between enrollment and the follow-up period. Average PHQ-9 and GAD-7 score changes with standard deviations between the initial assessment upon Wellnite enrollment and second assessment during the follow-up period were reported. Subgroup analysis was performed based on use of Wellnite's chat therapy function, presence of self-reported psychiatric medication side effects, use of psychiatric medications prior to enrolling in Wellnite, and whether users changed psychiatric medications while using Wellnite's service.

Results

The survey was sent to 81 patients and completed by 30 patients, resulting in a response rate of 35%. Baseline characteristics of survey respondents are shown in Table 1. The average age of survey respondents was 35 years (standard deviation [SD], 9 years) and the sample was predominately female. Upon enrollment, 26 patients completed the PHQ-9 questionnaire with an average score of 16 points (SD, 4 points), indicating moderately severe depression.[6] Twenty-seven patients completed the GAD-7 questionnaire with an average score of 14 points (SD, 4 points) indicating severe anxiety upon enrollment.[7]

Table 1. Cohort characteristics

Characteristic	Value (SD)
Average Age (years)	35 (9)
Male	n=8
Female	n=22
Average PHQ-9 Score upon enrollment (n=26)	16 (4)
Average GAD7 Score upon enrollment (n=27)	14 (4)

SD, standard deviation; *PHQ-9*, Patient Health Questionnaire; *GAD-7*, General Anxiety 7-item scale.

Over the course of the study period, patients experienced decreases in both PHQ-9 and GAD-7 scores. After Wellnite use, the average PHQ-9 score was 10 points (SD,7 points) and the average GAD-7 score was 7 points (SD, 5 points). Figure 1 displays the change in average PHQ-9 and GAD-7 scores over the course of the study period.

Figure 1. Average PHQ-9 and GAD-7 score upon enrollment and during follow-up. Cut off lines for levels of severity are included. Error bars indicate standard deviation of average score.
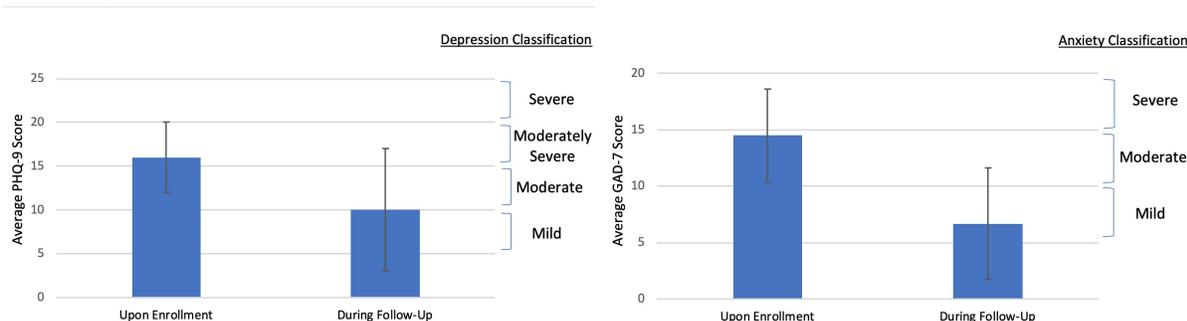
Among patients who completed the PHQ-9 upon entry into the program and during the follow-up period, there was an average decrease in PHQ-9 score of 7 points (SD, 6 points) (Table 2). Those who utilized Wellnite's chat feature reduced their PHQ-9 scores by an average of 9 points (SD, 8 points) while those who did not utilize the chat

feature reduced their PHQ-9 scores by an average of 6 points (SD, 6 points). Those who changed their medication for depression while using Wellnite experienced an average PHQ-9 score decrease of 9 points (SD, 6 points). Those who did not change their medication while using Wellnite experienced an average PHQ-9 score decrease of 5 points (SD, 7 points).

Table 2. Average change in PHQ-9 score from enrollment to follow-up. PHQ-9 scores are on a 27-point scale from 0-27. Higher scores indicate more severe depression. Negative values represent decreases in PHQ-9 scores.

Subgroup	Average Point Change in PHQ-9 Score (SD)
All patients (n=26)	-7 (6)
Utilization of chat feature	
Yes (n=4)	-9 (8)
No (n=23)	-6 (6)
Side effects	
Yes (n=9)	-6 (6)
No (n=17)	-7 (7)
Prior use of medication for depression	
Yes (n=18)	-6 (7)
No (n=8)	-8 (6)
Changed medication during Wellnite use	
Yes (n=14)	-9 (6)
No (n=12)	-5 (7)

PHQ-9, Patient Health Questionnaire; *SD*, standard deviation.

Among patients who completed the GAD-7 upon entry into the program and during the follow-up period, there was an average decrease in GAD-7 score of 8 points (SD, 6 points) (Table 3). Those who utilized Wellnite's chat feature reduced their GAD-7 scores by an average of 9 points (SD, 3 points) while those who did not utilize the chat feature reduced their GAD-7 scores by an average of 8 points (SD, 7 points). Those who changed their medication for anxiety while using Wellnite experienced an average GAD-7 score decrease of 9 points (SD, 5 points). Those who did not change their medication while using Wellnite experienced an average GAD-7 score decrease of 6 points (SD, 7 points).

Table 3. Average change in GAD-7 score from enrollment to follow-up. GAD-7 scores are on a 21-point scale from 0-21. Higher scores indicate more severe anxiety. Negative values represent decreases on GAD-7 scores.

Subgroup	Average Point Change in GAD-7 Score (SD)
All Patients (n=27)	-8 (6)
Utilization of chat feature	
Yes (n=4)	-9 (3)
No (n=23)	-8 (7)
Side effects	
Yes (n=8)	-8 (6)
No (n=19)	-8 (7)
Prior use of medication for anxiety	
Yes (n=18)	-7 (6)
No (n=9)	-10 (6)
Changed medication during Wellnite use	
Yes (n=14)	-9 (5)
No (n=13)	-6 (7)

GAD-7, General Anxiety 7-item scale; *SD*, standard deviation.

Discussion:

We present a descriptive study of Wellnite users to demonstrate the changes that users experience in depression and anxiety symptoms during use of our service.

Both average PHQ-9 and GAD-7 scores decreased during Wellnite use. At enrollment, the cohort's depression and anxiety were classified as moderately severe and moderate, respectively, according to initial average PHQ-9 and GAD-7 scores. At the end of the follow-up period, average depression and anxiety scores were classified as mild. While the PHQ-9 and GAD-7 are not diagnostic tests, reduction in scores through the use of Wellnite shows promise in our service's ability to ameliorate depressive and anxiety symptoms.

Reductions in PHQ-9 and GAD-7 scores were sustained in all subgroups analyzed. Those who utilized Wellnite's chat feature as well as those who used Wellnite to change their psychiatric medication experienced substantial reductions in PHQ-9 and GAD-7 scores.

These reductions highlight Wellnite's point-of-service features. Clinicians are readily available to adjust and change medications if patients are not receiving the full benefit from their current therapy. Additionally, Wellnite's chat-based service alongside pharmacological therapy provides accessible combination therapy in order to maximize mental health outcomes. One patient used the free-text field in their survey to write, "When extremely overwhelmed it's helpful to just talk it out and get logical guidance from an empathetic ear." These integrated features likely led to the improvements in mental health that were observed in the cohort.

Of note, our study was conducted during the COVID-19 pandemic. Depending on the patient's location, patients experienced shelter in place mandates, economic stress, and increased isolation. These factors likely had a large impact on patient's depressive and anxiety symptoms as well as overall mental health. In spite of current stressors, patients were on average able to reduce their depressive and anxiety symptoms through Wellnite's use.

Our study has some limitations. First, our study's limited sample size precluded us from performing statistical analysis on changes in PHQ-9 and GAD-7 scores. Second, while the PHQ-9 and GAD-7 are used and accepted as part of diagnostic criteria for depression and anxiety, these scores alone are not diagnostic tools. Thus, no conclusion can be drawn regarding clinical diagnoses of anxiety or depression.

We showed that patients who use Wellnite's service had lowered their GAD-7 and PHQ-9 scores. This descriptive analysis demonstrates that Wellnite is providing efficacious mental health services. This data will help us improve our pharmacological and nonpharmacological services to better tailor treatment to our users. We hope to continue to follow our users to assess further mental health improvements as the service continues.

References

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