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Optimizing Mental Health Care by Increasing Access Services through Evidenced-based mHealth Applications

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Abstract

BACKGROUND: The COVID pandemic has disrupted mental health services leading to an increased need for mental health support. Nearly half of all adults in the United States have reported worry and stress leading to a rise in feelings of anxiety. Currently, there is a mental health workforce shortage, impacting the available treatment services. Mobile Health (mHealth) applications can help bridge the gap in the availability of these services and potentially improve health outcomes through education, social support, self-managed care, and patient-provider communication.

PURPOSE: The purpose is to optimize mental health care and access to services by leveraging the use of mHealth applications.

METHODS: The Technology Acceptance Model (TAM) guided this quality improvement project using technology to support mental health. A college representative sent a Qualtrics© survey to adult participants who were students, employees, or staff on the campus. In addition, all participants had regular access to a smartphone and no previous experience with the Sanvello© digital application. The participants self-enrolled in the project by providing consent, demographic information, and responses to the Generalized Anxiety Disorder 7 (GAD-7) instrument. After completing the GAD-7, participants received download and use instructions for the Sanvello© smartphone application. Following the use of the smartphone application, participants were surveyed for their perceptions on the use of mHealth for mental health care.

RESULTS: Pre-intervention findings included an aggregate GAD-7 median score of 18.96 indicating high levels of anxiety, a gap in the resources for those with anxiety, worry, and stress symptoms, and that participants reported receptivity to education as well as preventative and early treatment. 50 participated in the pre-intervention survey and received instructions on the

use of the Sanvello© app. Post intervention survey participants (n=32) reported they used the free version of the application. Most indicated that they used the application less than once a week, with 50% of participants indicating they felt the mHealth application improved access to mental health care services. Following the intervention, an aggregate GAD-7 score of 15.52 was noted. Qualitative thematic analysis noted four dominant themes: ease of use, time, technical functionality, and engagement in the use of the application.

CONCLUSION: Providing care through technological tools such as mHealth applications can reform how we support access to mental health services while delivering evidence-based care. This use of technology permits greater flexibility for patients and mental health care providers while optimizing access to mental health services.

Keywords: Mental health, Technology and Informatics, Self-Management, Health Promotion Behaviors, and Disease Prevention, Quality & Safety

Optimizing Mental Health Care by Increasing Access Services through Evidenced-based

mHealth Applications

Mental health services in New Hampshire (NH) remain inadequate (Couture, 2020). Providing care through technological tools such as mobile health (mHealth) applications can reform how we increase access to services while delivering evidence-based mental health care. An increase in services through the use of mHealth applications occurs by allowing greater flexibility for patients and mental health care providers while optimizing access to countless mental health services. mHealth technology includes medical health interventions supported by mobile devices, such as mobile phones and other wireless devices (Iribarren et al., 2017). Using mHealth offers the potential to improve health outcomes by effectively increasing patient knowledge about a condition, providing social support, implementing self-managed care, improving patient-provider communication and improving health care delivery (Iribarren et al., 2017). mHealth interventions facilitate innovative research, screening, prevention, treatment, and care delivery. Currently, in NH there is a workforce shortage in the mental health sector, impacting those in need of mental health care. Leveraging mHealth applications can help to bridge the gap in the availability of mental health services.

Problem Description

Americans are facing many challenges that can be overwhelming and stressful, with strong emotions that can lead to feelings of anxiety (Centers for Disease Control and Prevention, 2021). In addition, the COVID pandemic has disrupted mental health services in most countries leading to an increased need for mental health, and substance use disorder support (WHO, 2020).

Nearly half of all adults in the United States have reported many negative impacts, including worry and stress, leading to a rise in feelings of anxiety.

It is a widely recognized issue, even pre-pandemic, that those on a community college campus have much higher rates of unmet mental health concerns when compared to those in a 4-year college and university system. Providers in campus counseling and health centers have difficulty reaching those in need (Lattie et al., 2019). In addition, the community college system has higher rates of non-traditional students who are more likely to face additional barriers to accessing care. These additional barriers include the increased likelihood of academic studies along with responsibilities of a full-time job, family obligations, and having to find a balance between their personal, academic, and professional commitments. Despite the high prevalence of anxiety (currently 4% of the world population), only one-third will receive treatment (Patel et al., 2020). The current mental health care workforce shortage has been a significant barrier to treatment.

According to the National Institute of Mental Health (NAMI), "a serious mental illness (SMI) is defined as a mental, behavioral, or emotional disorder resulting in serious functional impairment, which substantially interferes with or limits one or more major life activities" (2020, para 4). According to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2020), the prevalence of serious mental health care concerns (pre-pandemic) in NH is slightly higher than that of the New England region and nationally (SAMHSA, 2020). For example, from 2017 to 2019, the prevalence of serious thoughts of suicide in NH was 4.9 annually, compared to 4.8 regionally and 4.5 nationally (SAMHSA, 2020). At the same time, the prevalence of a documented serious mental health concern in NH was 5.3 annually, compared to

5.1 regionally and 4.8 nationally (SAMHSA, 2020). Lastly, the prevalence of mental health

service use among those with a documented mental illness in NH was 49.2%, close to the

regional average (51.0%) but more significant than the national average (43.6%), and while the

prevalence of mental health concerns is higher, access and use are at or better than the regional

and national averages (SAMHSA,2020). Historically, NH has been proactive in addressing

mental health concerns. While access has always been a priority, resources have typically been

constrained, and the pandemic has created a larger problem.

      While the New Hampshire Department of Health and Human Services (NHHHS)has

voiced that the mental health services remain inadequate as resources have typically been

constrained and have made attempts to improve access to mental health care services, the

pandemic has created a more significant problem (2020). The NH Community Behavioral Health

Association reported that in 2018, more than 10% of clinical positions in NH's mental health

system were unfilled; this is a total of 244 vacancies (NHHHS, 2020). To fully meet the mental

health needs of the increasingly diverse population, NH needs equal access to mental health care.

Barriers include access to adequate transportation, available services, the digital divide,

challenges with time off from work, childcare, language barriers, and inadequate healthcare

benefits (NHHHS, 2020). In addition, the consequences of untreated mental health concerns such

as anxiety can have a ripple effect and lead to avoidable hospitalizations, crisis treatment, and

severe mental health illnesses.

      The NHHHS has a 10-year plan with stakeholders and the public input to improve mental

health services. In the past six years, funding for mental health services in NH has increased, yet

more significant challenges within our mental health system remain due to many barriers

(NHHHS, 2020). Some of the services detailed in the ten-year plan include increased efforts to address suicide prevention, enhance the delivery of mental health services, provide stable mental health treatment, integrate peer support, prevention, early intervention, and community services.

An assessment of the currently available resources from a two-year community college's health and counseling services department pertaining to the education, preventative, and early treatment of anxiety on campus was completed pre-pandemic. The assessment, coupled with current mental health trends, indicated that increased mental health resources are necessary. In addition, the assessment data revealed a gap in the campus resources for those with anxiety, worry, and stress symptoms. Prior to the pandemic, the college employed both one full-time and one part-time counselor; however, both positions became vacant the semester prior to the pandemic, with only the part-time position currently filled. The staffing change led the campus to utilize off-campus services, including a local outpatient mental health community center and a telehealth counseling service that allowed up to 6 virtual visits. Locally, there is also a community mental health crisis team available 24 hours a day. All services prior had a focus on short-term crisis management. In addition, while outreach programs were offered on campus pre-pandemic, these programs were not provided during the pandemic, consistent with social distancing guidelines.

Furthermore, the assessment revealed that the individuals on this campus were receptive to seeking education as well as preventative and early treatment. As a result, a part-time counselor was hired to provide evening office hours coupled with telehealth mental health services due to social distancing for short-term acute and crisis care concerns to address the gap.

However, while a counselor is available, there remains an opportunity to increase access who cannot utilize these services.

Available knowledge

Anxiety-related disorders are the most common mental health illness and far exceed face-to-face services currently available in the United States. While many experience anxiety that impacts wellbeing and daily functioning, few seek out mental health services, and fewer will qualify for mental health services. Screening efforts have improved over the last year, with adults three times more likely to screen for an anxiety disorder when compared to 2019 (31% vs. 8%) (Brewer, 2021). Access was a concern pre-pandemic and has been exacerbated in the past year with a forecasted demand exceeding supply (Johnson, 2020). Across all mental health conditions, anxiety disorders may present the most promising area in mental health for quality improvement initiatives through technological interventions. mHealth is a portable tool that can improve access to care and improve patient outcomes.

In a randomized control study conducted by Moberg et al., the objective was to determine the effectiveness of the mHealth application Sanvello© (formerly Pacifica) (2019). In this study, participants were compared to a waitlist control group; the participants saw a significant reduction in post-treatment scores of the Generalized Anxiety Disorder-7 (GAD-7) by 39.2% (p=0.031) (Moberg et al., 2019). In addition, active participation was noted to support a feeling of empowerment, awareness of their condition, understanding, and encouraged them to utilize tools learned for self-management (Patel et al., 2020). The application prompts users once a day to rate their mood, and based on this rating; it recommends activities to improve their mood. Peer support groups, cognitive-behavioral therapy (CBT), and optional counseling services are also

available. The willingness to incorporate innovation, invest in new ideas, and leave behind old

traditions is encouraged by the NHHHS; the utilization of mHealth applications could help fulfill

those needs (NHHHS 2020).

Rationale

The Technology Acceptance Model (TAM) is a framework for understanding users'

acceptance of such tools, and it best addresses the clinical issue at hand. The elements of the

TAM model include perceived ease of use and usefulness, attitude, and the intent to use.

Perceived ease of use refers to the degree to which the user believes that using a system would be

free of effort and that using the system will improve their action/enhance their performance

(Davis, 1989). In comparison, the perceived usefulness refers to the degree to which the user

believes the system would enhance their performance (Davis, 1989). In addition, the attitude of

the user is considered to be influenced by the perceived usefulness and perceived ease of use of

the system, and attitude influences the user's overall intent to use the system (Urhiewhu, 2015).

mHealth applications have a wide range of available tools, including thought and mood tracking,

medication reminders, psychoeducation, modules for cognitive behavioral therapy, coping skills

education, and guided meditations (Bakker & Rickard, 2019).

According to Wu & Chen, "attitude is the most powerful predictor of intention to use

technology" (2017 p. 224). Behavioral intention is a user's intention to perform a behavior using

the system, and it is the main predictor for actual behavior change. The stronger intention of use

of the system leads to an increased effort to perform the behavior, such as the use of the

technology (Yumi Lee & Evelin Witruk, 2016).

Of the 2.6 billion active smartphone users worldwide, users tend to use their phone for a single purpose, in small increments of time frequently throughout the day, and this allows for a more significant actual behavioral change as applications are commonly used throughout the day (McCloud et al., 2020). mHealth applications are an expanding digital technology with a market size estimated at around 40.05 billion dollars in 2020 and is expected to reach 47.7 billion by the end of 2021, demonstrating that mHealth is readily available to the user supporting the ease-of-use concept (Grand View Research, 2021). One in five smartphone users indicate that they have a health-related application on their phone, with the most common applications focusing on weight, exercise, and diet (Ameringen et al., 2017). As the population is already using health-related applications for other purposes, an application for mental health could be beneficial. It is a creative solution to increase access to mental health care and help individuals independently reduce and manage their anxiety. As advancement has been made with mHealth applications, there is an opportunity to increase access to evidence-based mental health treatment methodologies that have already been established in face-to-face treatments, such as guided meditation (Ameringen et al., 2017). A mHealth tool can potentially help reduce the perceived personal, professional, academic, social, and economic burden. The TAM model suggests that mHealth can be used as an early intervention for behavior change via the ease of use and perceived usefulness for the participant. The personalization of a mHealth application could lead to a feeling of empowerment and develop a positive attitude that is important for intent to use from the user who has anxiety while also reassuring them at a moment's notice. An increasing number of studies show mHealth applications for anxiety are effective digital technology for the development of the positive attitude and intent to use that translates to actual change toward healthy lifestyle behaviors.

The introduction of accessible and evidence-based mHealth applications supports ease of use as they allow flexibility regarding when it is utilized and the user's location, frequency, and duration. These applications will enable the user to explore, identify and use alternative treatments in a sustained and transformative way. There are many applications available, and the market is rapidly growing. Some applications are fee-based, while many have free, simplistic, yet impactful versions. These digital tools are available for broad and specific audiences, and they can offer reminders of medications or treatments, supportive resources such as videos, self-assessments, and peer support. mHealth applications have been noted to have a beneficial impact on behavioral change. In addition, they can be a preventative tool for mental health concerns as it allows the user to take primary responsibility for their care and mental wellbeing.

The specific mHealth application, Sanvello©, was selected for this quality improvement project due to the inclusiveness of the resources. Additional resources through the application include peer support groups, guided meditations, educational videos, and goal setting. Interventions are tailored to the users' provided information, and the application offers a free platform for users. The use of mHealth smartphone applications has been the focus of recent research; in one study, there was a statistically significant reduction of Generalized Anxiety Disorder scores by 48% in 4 weeks (Roy et al., 2020). In a second study, Moberg et al., reported a significant reduction in Generalized Anxiety Disorder scores by 48% and 57% after 30 and 90 days using several mHealth applications (2019). mHealth applications can even be linked to online assistance in an emergency. Many mental health-based mHealth applications have positive User Engagement Indicators (UEIs). This indicates that users report that the application's usability, satisfaction, and acceptability are positive (Ng et al., 2019). In a trial of a CBT application, the retention of users was 82% at eight weeks (Brewer, 2021).

Digital technology such as mHealth applications can be used in conjunction with traditional therapy. In fact, most support the use as an adjunct, not a replacement for face-to-face therapy. It can aid in documenting symptoms and stressors to help initiate treatment earlier and support mental health care professionals in determining a more accurate care plan. Many surveyed mental health care patients have expressed an interest in mHealth tools to help treat symptoms and augment traditional therapy. In a meta-analysis by Lattie et al (2019), the effectiveness of the digital mental health application used by college students did not vary by type. For example, the mHealth application StressProffen©, which uses CBT, was piloted for stress management in cancer survivors. In-person behavioral health interventions are not always an option for survivors as they often do not feel comfortable or able to participate in face-to-face settings. Users indicated lower levels of stress and higher health-related quality of life after eight weeks of use, while it provided low-threshold support for the user (Børøsund et al., 2020).

A mHealth application such as Sanvello© can be utilized in an array of modalities and supports the vision of the NH 10-year plan. Sanvello© is marketed as a mHealth application guided self-help tool to manage anxiety, stress, and depression. It is not marketed as a diagnostic tool or a substitute for professional mental health treatment. The mHealth application prompts users to self-assess their mood and, based on this self-rating, provides activities to improve their mood via suggested sessions. The NH 10-year plan is to incorporate cross-cutting technology, a high-quality workforce, and increase peer and natural community support (NHHHS, 2020). For example, suppose we can make strategic changes to increase mental health care access in NH, eliminate inequities, and improve care coordination. In that case, fewer people may seek out emergent psychiatric care, where high rates of emergency room boarding occur due to limited inpatient resources (NHHHS, 2020). mHealth applications can help reduce the strain of an

already taxed health care system through community education, prevention, early treatment, and adjunct therapy. If we provide the proper care at the right time, we can reduce severe manifestations of anxiety and distress, which will nudge the population to a better state of wellbeing.

Specific Aims

The purpose of this quality improvement project is to optimize mental health care by increasing access through the use of mHealth applications for those with symptoms of anxiety disorders. The specific aims of this QI project included exploring the use of mHealth toward addressing access to mental health care by introducing mHealth applications as an option for those with mental health care concerns across the college campus at all levels by four weeks. Additionally, a goal included educating and reinforcing mental health resources that are currently available on campus and surrounding community resources for those who could benefit from the services. A related goal was to provide education to those at the point of care, including Residential Directors, Health Services, and Counseling Services. The final goal was to collaborate with all stakeholders to assess the campus community's overall mental health, educate and reinforce mental health services, and reportable mental health symptomology across the community. The expected outcome of the QI project was that the participants would report an increase in access to available services for mental health care concerns. The benefit of the mHealth application quality improvement project is the potential impact of change overall in mental health on the community college campus.

Methods

Context

The organization is a 2-year community college located in central NH that supports advancement, and civic engagement, with more than 80 academic programs to approximately 4,600 students annually (*NHTI*, 2021). In addition, there are over 100 faculty and staff employed to provide post-secondary education. Health services are located on campus for all enrolled students, with counseling services available in-person or by telehealth occurring by appointment or walk-in. In addition, faculty and staff have employee benefits to address any mental health concerns.

A convenience sample for this project included adults aged 18 years and older were current students, employees, or staff who responded to the campus email sent from the VP of Student Affairs (VPSA), who agreed to be the facility stakeholder. Additional inclusion criteria for the QI project included reported regular access to a smartphone and no previous experience with the Sanvello© smartphone application. To ensure participant safety, local emergent resources were provided throughout the project. Following survey completion, available mental health resources, including information on obtaining emergent services, including the local 24-hour mobile crisis unit contact information, were made available to the participants.

Cost-Benefit Analysis

The cost of using a mHealth application for mental health is significantly lower than that of traditional face-to-face care. In addition, many evidence-based mHealth applications have free versions in addition to tiered levels of service depending on user needs. These applications can assist those users with anxiety symptoms who may not be able to afford mental health care.

As expected of a Doctor of Nursing Practice (DNP) student, this author has expended

considerable time and energy on this quality improvement (QI) project. In addition, those key

stakeholders involved with the project also devoted their time and energy. The QI project team

had a significant role in referring those with anxiety symptoms to the recruitment email. The

DNP project team consisted of those involved with the educational/reinforcement sessions and

those staff who were frequent contact points for the community. This was in addition to their

staff role and responsibilities with no compensation. In addition, the Office of Student Affairs

and Health and Counseling Services (HCS) department worked with the project manager to help

facilitate educational sessions, sent emails to the community college community, and assisted in

the collaboration of mental health assessment and education campus-wide.

Intervention(s)

The HSC department worked closely with the project manager to help facilitate

educational learning through social media, emails, direct face-to-face contact about anxiety

symptoms, and local resources available for mental health services. The Medical Social Worker,

Director of Health Services, Senior Human Resources Officer, Campus Residential Directors,

and members of the health services department are a vital part of the QI team. The QI team

members referred those experiencing anxiety, when appropriate, to the email with the

recruitment information.

The participants were self-selected by responding to the recruitment email sent by the

VPSA. Recruitment included the link for the *Qualtrics ®* survey, which included the screening

questions, informed consent, demographic information, and the GAD-7. Using the functionality

of the software, the informed consent was the only forced response and thereafter all responses

were requested rather than forced. The *Qualtrics ®* survey provided resources on traditional

treatment options, including suicide hotlines and the local mobile crisis unit phone number.

Additional implementation elements included screening mental health concerns,

increased education to campus staff, and active collaboration of staff, faculty, health care team,

and stakeholders. The overall QI project followed the traditional Plan-Do-Study-Act model. The

QI project proposal was submitted and approved by the university and community college in the

planning phase.

Step 1-Educational sessions:

College community staff received reinforced education on symptoms so that they could

identify potential participants. This educational component was primarily conducted virtually

with a few traditional face-to-face sessions while using social distancing guidelines to

accommodate the learner. Departments included in these educational sessions included the

Director of Health Services, HSC, Senior Human Resources Officer, the Campus Dorm

Residential Advisors, and Campus Residential Directors.

Step 2-Recruitment:

Every student, staff, and faculty member of the community college has a free password-

protected email. Emails and social media posts were drafted to educate on anxiety and the

Sanvello© application QI project, emailed by the VPSA to everyone on campus. The email

introduced the project, the project lead, the overall purpose and the *Qualtrics ®* survey link.

Then, if they wished to participate, participants clicked on the link within that email, which took

them to the *Qualtrics ®* survey, where they went through the screening process, including

consent to participate. The informed consent included verifying that they were at least 18 years

of age, a current student, staff, or faculty at the community college, that they owned a

smartphone, and that they had never used the Sanvello© app before. An affirmative choice

would bring them to the survey, while a negative response would bring them to a thank you page

using a forced completion response functionality. The participants then received three questions

for demographic purposes, including age, gender, and role on campus, followed by the GAD-7,

instructions on how to download and use the Sanvello app, and a list of local mental health

services, including crisis hotlines and mobile crisis units.

Step 3-Continued Support:

In the following weeks, the DNP student drafted emails and social media posts to provide

further anxiety mental health education, which the VPSA and HCS distributed to the community

via secure campus-wide email distribution. The education included resources, symptoms that

require immediate assistance services, available resources within the Sanvello© application, and

a reminder to participate in the project.

Step 4-Follow Up:

At the end of four weeks, the DNP student drafted another email to be sent by VPSA to

request that all participants in the QI project complete a second, post-intervention survey through

a *Qualtrics* ® link. As before, participants provided informed consent and verified their age and

possession of a smartphone. However, additional inclusion criteria reflected participation in the

QI project and use of the Sanvello© app with a forced completion response with an affirmative

choice linked to the survey and a negative choice to a thank you page. After affirmation, they

received the demographic and GAD-7 items as before. However, the post-intervention survey

also included items about the use of additional services, Sanvello© App use, the TAM elements

for perceived ease of use and perceived usefulness, and a comment section. An additional

question asked them if they used other mental health services in addition to the Sanvello©

application. Then, they completed the survey, which incorporated the GAD-7 for the perception

of anxiety, questions about the Sanvello© app use, the TAM scale for perceived usefulness, use

acceptance, and ease of use, and an opportunity to add comments in a free text field. As with the

first survey, education on available community services and urgent/emergent care resources were

provided.

Study of the Intervention(s)

To measure the effectiveness and perceptions of interventions within the college campus,

surveys were provided before and after the intervention phase of the project. As previously

noted, the initial survey included demographics and the GAD-7, and the educational component.

The Medical Social Worker completed a retrospective chart review of health and

counseling services from the counseling department, which reviewed services rendered and

referrals and assessed how often treatment was sought or initiated before and after the

intervention by students.

Measures

Demographic data included age and self-reported gender. Participants were also asked to

indicate their role as students, faculty, or staff. Demographic variables aided in exploring barriers

to using the mHealth application (Hammer, 2011). Inclusion criteria were any complaints of

anxiety symptoms, are 18 years of age or older, have ever used the application Sanvello©, have a smartphone, and consent to be a part of the mHealth Quality Improvement project.

The GAD-7 is an evidence-based assessment tool that is widely used and freely available. It is a 7-item questionnaire used to identify the probability of Generalized Anxiety Disorders and measure the severity of a Generalized Anxiety Disorder (Zhong et al., 2015). The score on the GAD-7 can range from 0 to 21, with the higher the number indicating more significant anxiety symptoms. The four response categories are *not at all*, *several days, more than half the days*, and *nearly every day* (Zhong et al., 2015). The internal consistency of the GAD-7 is (Cronbach α = 0.9) and provides a sensitivity of 89% and a specificity of 82% (Spitzer et al., 2006). The criterion validity for the GAD-7 was assessed based on the clinical indicators of diagnosis of Generalized Anxiety Disorder (Zhong et al., 2015). The GAD-7 has reliability and validity in adults in clinical practice and research (Spitzer et al., 2006).

The Technology Acceptance Model (TAM) and survey is a 10 Likert-Style instrument with eight categories for response including *extremely likely, quite likely, slightly likely, neither likely or unlikely, slightly unlikely, quite unlikely, and extremely unlikely* (Davis, 1989). The internal consistency of the Perceived Usefulness and Ease of Use sections have a Cronbach score ranging from α 0.94 to 0.98 with convergent validity supported by only two of 72 monotrait-heteromethod correlations falling below significance (Davis, 1989). Permission to use the instrument was requested by the author with permission granted.

Analysis

Quantitative data

Descriptive statistical analysis for aggregate categorical data noted frequency and percentage. Descriptive statistical analysis was conducted for the continuous data derived from the GAD-7 and reported as Mean, Standard Deviation (SD), and Range. Aggregate data were compared reflective of pre-and post-intervention survey completion of the GAD-7. Descriptive statistical analysis was conducted for the TAM and reported as frequency and percentage. While the TAM scale is a Likert-type scale typically reported as Mean, SD and Range, the data was categorized into three categories of Likely, Neither Likely or Unlikely and Unlikely and reported with frequency and percentage

Qualitative data

The qualitative data captured in the survey following the request to provide any comments, thoughts, and experiences were reviewed for pattern recognition, noting themes and exemplar statements.

Timeline

The data collection and implementation phases were significantly impacted due to organizational staffing restructuring of the key stakeholder. This restructuring, including a change to the VPSA role, impacted the initial start of the implementation phase and the timeline for the data collection. In order to have the highest return rate on the post-intervention survey, the implementation phase was shortened so that data collection would occur before the start of finals, the end of the academic semester, and campus winter break.

Ethical Considerations

These applications can be appealing to users as they are often perceived to reduce stigma and anxiety when seeking professional treatment for mental health concerns. Participants can

also feel more comfortable expressing thoughts and feelings to a digital application than face-to-

face due to embarrassment and privacy. According to the Sanvello© Privacy policy, they may

collect information about the user directly or indirectly from or through applicable Sanvello

Partners (2021). Sanvello© reports that they comply with applicable business associate

agreements, their Privacy Policy, Health Insurance Portability and Accountability Act (HIPAA),

and the private protected health information defined under HIPAA (Sanvello, 2021).

There is an acceptable risk to participants in this quality improvement project due to fear

of social stigma or breach of reported private and protected health information as defined under

HIPAA. As previously noted, with the exception of the first question regarding consent,

requested rather than forced completion functionality supported the participant's opportunity to

withdraw or decline to answer any questions during the project by not submitting the surveys.

Although employed by the organization during the implementation phase of this project, an

honest broker of the organization was identified for the recruitment of potential participants. The

author of this study was not directly involved with the recruitment or healthcare of the

participants. Recruitment was organized by an honest broker of the organization to avoid any

potential conflict of interest. A university representative's review of the proposal indicated that

the project met the criteria for a QI project. The stakeholder's institutional review board also

indicated that the project met the criteria for a QI project

The first question of the survey was the explanatory letter to participants ending with a

request indicating consent. The consent process was embedded in the *Qualtrics*® surveys.

Subjects were not coerced to participate in any way, and declining to participate in the survey did

not have any negative consequences. All information provided was kept completely confidential

as no personally identifying information was tied to the data collected in this quality

improvement project.

<div align="center">**Results**</div>

As previously noted, organizational restructuring occurred during the implementation

phase of the QI project, with a new key stakeholder coming from the interdisciplinary team. The

organizational changes created a significant impact on the overall QI project. Due to the

restructuring within the organization, timelines for implementation did change, with the project

start date later than anticipated and ending sooner than expected due to finals, end-of-semester

projects, and winter break for the organization.

Modifications were required during the Do phase of the PDSA with the initial

stakeholders, virtual educational sessions were created and sent to the stakeholder for

distribution. Because of social distancing restrictions, educational sessions did not occur face to

face, and educational sessions were delayed by several weeks in being distributed. Emails and

social media posts were drafted to educate on anxiety and the Sanvello© application QI project,

emailed by the VPSA to everyone on campus. Recruitment emails were also delayed by several

weeks, creating a delay in the timeline for the implementation phase.

During the implementation phase, a member of the QI project was promoted to the key

stakeholder after restructuring occurred within the organization. The new key stakeholder

assisted in the education phase of the project to distribute the educational presentations during

the implementation phase and promote additional distributional resources. Social media posts

were created with assistance from the project leader and counseling services department to

promote the QI project and educate the community. The timeline was altered to have the project

end sooner to meet the organization's needs due to the end of the semester and finals to allow for

adequate capture of post-intervention data. At the end of three weeks, the DNP student drafted

another email to be sent by the VPSA after approval by the new stakeholder. The email

encouraged participants of the project to complete the post-intervention survey.

Demographic Data

The categorical data for demographics are reported as frequency and percentage and are

provided in Table 1. The majority of the participants completing the pre-intervention survey

were aged 18-30 years (58%), female (78%), and identified as a student (88%).

Table 1

Pre-intervention survey demographic data

Demographic Data	Total Sample (N=50) *n (%)*
Age	
18-20	13 (26)
21-30	16 (32)
31-40	8 (16)
41-50	9 (18)
51-60	4 (8)
61 and over	0
Gender	
Male	10 (20)
Female	39 (78)
Non-binary/third gender	1 (2)
Prefer not to say	0
Role in the Community	
Student	44 (88)
Faculty	2 (4)
Staff	4 (8)
Prefer not to say	0

While 50 participated in the pre-intervention survey, only 32 participated following the use of the Sanvello application, with a majority (36%) in the 18-30 age bracket. As before, 88% reported their role as that of students, with the majority self-identifying as female (75%).

Table 2

Post-intervention survey demographic data

Demographic Data	Total Sample (N=32) *n (%)*
Age	
18-20	9 (28)
21-30	8 (25)
31-40	4 (13)
41-50	7 (22)
51-60	4 (12)
61 and over	0
Gender	
Male	8 (25)
Female	24 (75)
Non-binary/third gender	0
Prefer not to say	0
Role in the Community	
Student	28 (87)
Faculty	0
Staff	4 (12)
Prefer not to say	0

GAD 7

The baseline data noted (50 participants) an aggregate GAD-7 of 18.96, with the higher score indicating an association of the participant self-rating a poor physical and mental status (Zhong et al., 2015). The scoring range for the GAD-7 has cutoffs of 0-7 is low anxiety, 8-14 is moderate anxiety, and 15-21 for severe anxiety, with a score of 18.96 indicating severe anxiety disorder and that the participant finds it extremely difficult to perform daily activities due to

symptoms (GAD-7 (General Anxiety Disorder-7), n.d.) The three elements with the highest

score of reported symptoms of anxiety being: *Feeling nervous anxious or on edge,* with a mean

score of 3.14 (*SD*=0.85, range 1-4), *Worry too much about different things* with a mean score of

3.14 (*SD*=0.92, range of 1-4), and *Trouble relaxing* with a mean score of 2.80 (*SD*=0.93, range

1-4). Post-intervention GAD-7 aggregate scores for 32 participants was 15.52 which while

improved following the intervention is still indicative of severe anxiety. The top three highest

reported symptoms of anxiety being: *Feeling afraid as if something might happen* with a mean

score of 2.47 (*SD*=1.09, range 1-4), *Being so restless that it is hard to sit still* with a mean score

of 2.31 (*SD*=1.07, range 1-4), and *Feeling nervous, anxious, or on edge* with a mean score of

2.28 (*SD*=1.10, range of 1-4), as seen in Table 3. Overall reduction of aggregate GAD-7 scores

were by eighteen percent. Further pre-intervention data is provided in Table 3.

Table 3

GAD-7 Survey Data Pre- and Post-Intervention

| GAD-7	Pre-Intervention		Post-Intervention		
	M	SD	M	SD	Range
Feeling nervous, anxious, or on edge	3.14	0.85	2.47	1.09	1-4
Not being able to stop or control worrying	2.86	0.94	2.16	1.19	1-4
Worrying too much about different things	3.00	0.92	2.31	1.07	1-4
Trouble relaxing	2.80	0.93	2.27	1.15	1-4
Being so restless that it is hard to sit still	2.18	1.07	1.97	1.15	1-4
Becoming easily annoyed or irritable	2.60	0.98	2.28	1.10	1-4
Feeling afraid, as if something awful might happen	2.38	1.11	2.06	1.22	1-4

Used with permission GAD-7 with open access

Sanvello© Application Use and Other Mental Health Services

The participants of the quality improvement project used the free version of the

Sanvello© application but could upgrade to a paid version if they desired. Thirty participants

(94%) reported using the free version of the application. However, it is noted that 2 of the

participants completing the post-intervention survey elected to complete the post-intervention

survey elected not to answer this question. Eight (25%) participants reported utilizing other

mental health services while 24 (75%) did not (Figure 1).

Figure 1

Use of Mental Health Services in Conjunction with application
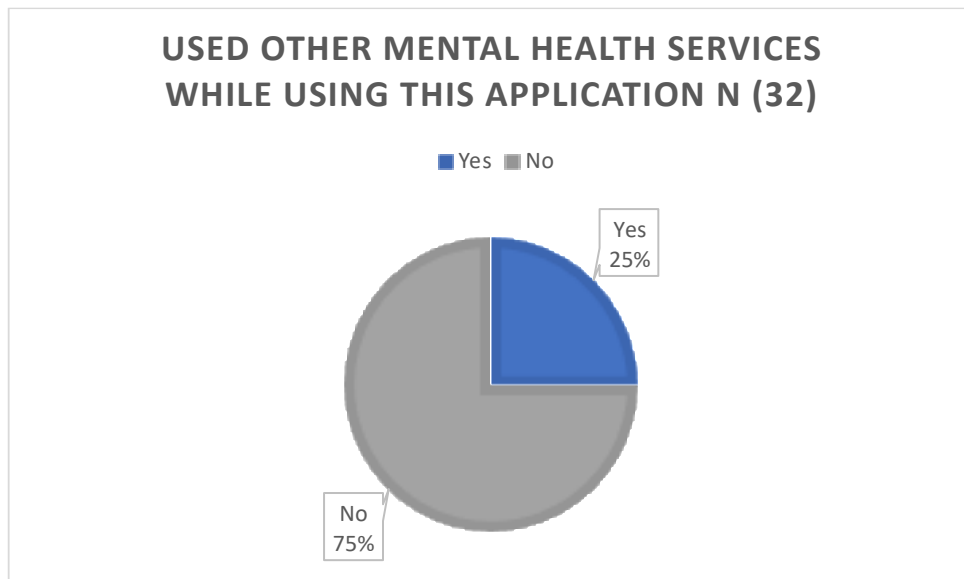
User Engagement & Experiences

Engagement is the participation in the application and motivation to use. Sixteen

participants indicated that they used the application less than once a week (57%). Twelve used

the application more than once a week (43%), see Table 4 for further data. It is noted that 4 of

the participants chose not to answer this question.

Table 4

Frequency of application use

Frequency of application use	Total Sample (N=28) *n (%)*
Weekly frequency	
less than once per week	16 (57)
1-2 times a week	5 (18)
3-4 times a week	4 (14)
5-6 times a week	1 (4)
Daily	2(7)

Access to services

Half of the reporting participants (n=47%) reported that they felt the application

improved their access to mental health services, (refer to Table 5). However, it is noted that of

the 19 participants, one participant chose not to reply.

Table 5

Application improved access to Mental Health Services

Do you feel the Sanvello© mHealth Application improved your access to mental health services?	Total Sample (N=19) *n (%)*
Yes	9 (47)
No	9 (47)
No answer	1 (6)

After a retrospective chart review, completed by HCS, there is a noted increased use of

counseling services from the fall semester of 2020 to the fall semester of 2021 by sixty-one

percent see Figure 2. This evaluation demonstrated a greater than 50 percent increase in the

utilization of mental health services.

Figure 2

Counseling Visits by Semester since the start of the Pandemic
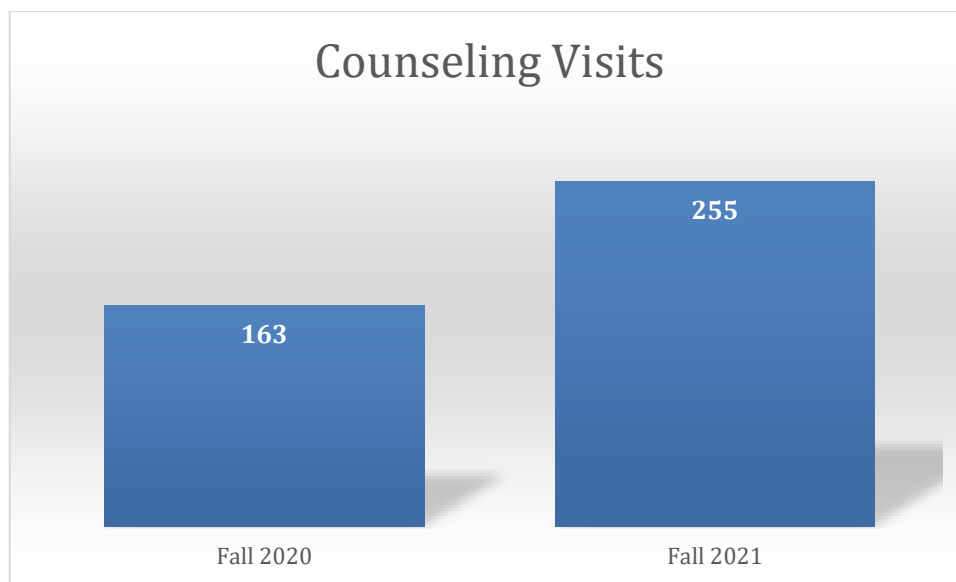
TAM

The perceived ease of use and usefulness, attitude, and the intent to use elements allowed

for several themes based on deductive analysis with reference to the TAM. Comments were

noted to correspond to four dominant themes: ease of use, time, technical functionality, and

engagement in the use of the application. Participants' comments on what was behind the

decision to stop using the Sanvello© were related to ease of use they included; *I found it difficult*

to navigate. I was extremely busy and didn't have time to figure out how to use it. I cannot

connect to an actual expert or professional feedback without paying, Time and other counseling

and *Time—use of app*. Participants provided comments, thoughts, and experiences with the

Sanvello© application they related to usefulness of the app. Some comments include *I didn't use*

it enough for it to help, I did like some of the features and found a few helpful, and *it was helpful*

to have some kind of journal and a way of seeing how certain behaviors contributed to my

depression. The issue is that I feel like I hit a wall with the free version, as I could no longer

progress with the journey sessions past a certain point. I tried getting the subscriptions, but it did

not work with my insurance, and so I started to use the app less.

TAM themes

Perceived usefulness

The original TAM scale was a 10-item scale with seven available choices ranging from

extremely likely with a value of 1 and *extremely unlikely* with a value of 7. Evaluating the overall

mean score within this range (1-7), the lower the mean score indicated the higher perceived

usefulness and perceived ease of use (Lewis, 2019). Subsequent revisions included a reversal of

order so that *extremely unlikely* received a value of 1 and *extremely likely* a value of 7. In these

revised scales, the higher mean scores were indicative of higher perceived usefulness and

perceived ease of use (Lewis, 2019).

In descriptive analysis for this study, the Likert style items were treated as categorical

data by combining the responses to *extremely likely, quite likely*, and *slightly likely* into the new

category as *likely*. The responses indicating *extremely unlikely, quite unlikely* and *slightly likely*

were combined into the new category of *unlikely*. Those who chose a response of *neither unlikely*

nor likely remained in a category of *neither* (Table 6). Participants reported with the exception of

the first question regarding the use of the app *would enable them to perform tasks more quickly*

(33%), the majority of the participants found the app to useful (55-59%). (Table 6)

Perceived ease of use

The majority of the participants reported a perceived ease of use (55-72%). (Table 6)

The results of the TAM survey do align with ease of use and increased use of the application,

while the perceived usefulness and effectiveness do align with user engagement. Applications

that create perceived usefulness and effectiveness coupled with ease of use and usability created

better adaption and use on a continual basis.

Table 6

TAM

TAM	Likely Total Sample N=18 *n* (%)	Neither Total Sample N=18 *n* (%)	Unlikely Total Sample N=18 *n* (%)
Perceived Usefulness			
Using Sanvello© in my job would enable me to accomplish tasks more quickly	6 (*33*)	9 (*50*)	3 (*17*)
Using Sanvello© would improve my job performance	10 (*59*)	5 (*29*)	2 (*12*)
Using Sanvello© in my job would increase my productivity	11 (*61*)	4 (*22*)	3 (*17*)
Using Sanvello© would enhance my effectiveness on the job	12 (*67*)	3 (*16*)	3 (*17*)
Using Sanvello© would make it easier to do my job	9 (*50*)	6 (*33*)	3 (*17*)
I would find Sanvello© useful in my job	10 (*55*)	5 (*28*)	3 (*17*)
Perceived Ease of Use			
Learning to operate Sanvello© would be easy for me	12 (*70*)	(4 *24*)	1 (*6*)
I would find it easy to get Sanvello© to do what I want it to do	13 (*72*)	4 (*22*)	1 (*6*)
My interaction with Sanvello© would be clear and understandable.	13 (*72*)	4 (*22*)	1 (*6*)
I would find Sanvello© would be clear and understandable	13 (*72*)	4 (*22*)	1 (*6*)
It would be easy for me to become skillful at using Sanvello©	14 (*77*)	3 (*17*)	1 (*6*)
I would find Sanvello© easy to use	(13 *72*)	4 (*22*)	1 (*6*)

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It is noted there was a 36 percent dropout rate from the pre- to post-intervention surveys. Survey responses were requested rather than the use of the forced response functionality except for the informed consent; therefore, participants answered not all questions. Factors that could have contributed to the drop rate include the delay in the timeline for the QI project with the end of the semester and competing priorities for the students, staff, and faculty

Discussion

Summary

The global aim of this QI project was intended to introduce additional mental health services through mHealth applications to optimize mental health care for those with symptoms of anxiety disorders. This QI project offered a more comprehensive and inclusive approach to access to mental health care services. The first key finding of this QI project was to explore the use of mHealth toward addressing access to mental health care. The second key finding was that mHealth applications are a viable option for those with mental health concerns.

An increase in access to services was reported by participants starting they felt access to services improved, an increase in the utilization of services as previously noted through the retrospective chart review and an increase in awareness of resources through an increase in outreach programs and increased referrals to the HCS department. Community college campuses are well situated to provide mental health services, yet they are typically under-sourced and have difficulty reaching out to those who are in need along with operating at full capability (Lattie et al., 2019). Digital technology such as mHealth applications can be used in conjunction with traditional therapy. In fact, most support the use as an adjunct, not a replacement for face-to-face therapy.

Explore the use of mHealth toward addressing access to mental health care

Key findings, from this limited sample, include that mHealth tools can address access to mental health care as an added resource, as evident through the TAM survey data and open responses from the users. Through using the mHealth tool, educational postings, and collaboration of campus resources, the GAD-7 aggregate scores decreased overall and increased utilization of counseling through the health services department on campus.

The outcomes of the QI project are consistent with Patel et al.'s (2020) findings that there is a need for improved awareness and understanding of digital health interventions, such as a mHealth tool, to improve the understanding of mHealth tools. For example, open-ended responses indicated a desire to seek mental health treatment, yet understanding how a mHealth tool can help is not fully understood.

Introduce mHealth applications as an option for those with mental health concerns

The data was subsequently evaluated for its effectiveness through the use of the GAD-7, TAM, and participant feedback. In addition, the mHealth application was evaluated for its perceived usefulness and perceived ease of use demonstrating a consistent significant relationship in the adaption of innovative technology such as the Sanvello© application (Davis, 1989). While TAM was not developed to explicitly analyze mHealth applications, combining it with the GAD-7 pre-and post-intervention and qualitative data allowed the assessment of the mHealth application usability and effectiveness in improving access to mental health care. The TAM survey responses did show that participants believed there was an ease of use and were able to acquire the skill set necessary to utilize the functions of the application, which in previous studies shows a positive effect on participant's perceived usefulness and attitudes towards the mHealth tool (Wu & Chen, 2017).

The qualitative data included the post-intervention comments by participants in order to determine pattern recognition, noting themes and exemplar statements on the application's perceived usefulness and perceived ease. For example, while mHealth applications promote self-efficacy for the user, behavioral attitude, time, and continuance intentions are essential in the tool's usability. An example of this is that while a participant reported that they liked some of the features and found some helpful, they did not utilize the application enough for it to be helpful in their management of anxiety symptoms.

Educate on available mental health resources

At the conclusion of the implementation phase, it was made clear that the strength of this project was the ability to create awareness of mHealth tools, the need for additional mental health care services, and how mHealth tools can be utilized to improve education and access to mental health.

Through social media posts, emails, and educational sessions, the QI project increased awareness of mental health concerns, anxiety symptoms, and how it can impact one's overall health. The increase in mental health awareness is evident as there was an overall increase in the utilization of counseling services on campus. It should be noted that while improved especially during a typically stressful time in the semester, severe anxiety was noted before and after the implementation of the QI project, indicating a high need for services.

Collaboration campus-wide on addressing overall campus mental health

Due to the impact of the workforce shortage and the COVID-19 pandemic, it is not understood if participants were attempting to utilize the Sanvello© for counseling services that they were unable to obtain elsewhere. In addition, due to the limited sample of participants in the post-intervention survey, shorter implementation period, and limited education and

communication than what was excepted, it is unclear if the project could improve community

access to mental health care. However, it should be noted that there was an increase in referrals

made to the counseling center.

Education is vital in the promotion of a new health care intervention. Suppose education

had proceeded as planned with weekly email reminders to the participants to utilize the

application and not solely rely on the use of social media. In that case, it is expected that more of

the participants would have utilized the application more than once a week. An area for potential

improvement is to further the outreach efforts on campus to promote mHealth tools in

conjunction with increased education on making them a successful part of one's mental health

care.

Interpretation

Access to Care

The COVID-19 pandemic has required resourcefulness for health care providers to

ensure ongoing access to mental health services available 24 hours a day. The purpose of this

quality improvement project was to use technology such as mHealth applications to create an

opportunity to increase patient access to evidence-based mental health treatments that can be

accessed whenever it is convenient for the user and allow the user to have more control over

their care (Patel et al., 2020). There are distinct associations with the COVID-19 pandemic and

an increased need for mental health services. For example, stakeholder reporting showed

increased use of counseling services from the fall semester of 2020 to the fall semester of 2021

and demonstrated that the QI project might be correlated to the change greater than 50 percent

through the mHealth application implemented for this project. In addition, many mHealth

applications can provide already established face-to-face mental health treatments such as cognitive-behavioral therapy (Ameringen et al., 2017).

User Engagement

In recent years there has been an increased use of mHealth applications. However, implementing and integrating mHealth tools into routine care settings has been a challenge with generally low engagement and completion rates of digital programs (Lattie et al., 2019). Although the quality improvement project did not meet the model length of four to eight weeks, as previously mentioned, participants' engagement for more than once a week using the Sanvello© application did occur, indicating perceived usefulness among users.

Stakeholder engagement provided perspective on how mental health concerns have been addressed, recent changes to outreach programs, staffing changes, and how the pandemic has impacted how services are delivered within the organization. The QI project created a better understanding of the available resources, organization limitations, and current campus activities leading to the creation of the project, short- and long-term goals, and how to test for successful implementation within the community.

Effectiveness

Common characteristics of mHealth applications focused on treating anxiety-based disorders are psychoeducation, relaxation, meditation, and mindfulness (Moberg et al., 2019). Data from this quality improvement project suggests that self-management of anxiety symptoms can be improved through the use of the mHealth application. The aggregate GAD-7 scores indicate that the use of the mHealth tools can positively impact the users' overall symptoms of anxiety. The overall GAD-7 score improved from the baseline score of 18.96, indicating severe anxiety to 15.52, while still within the severe anxiety scoring range, the overall improvement

was by 18% percent. This compares to a randomized control study where a group of participants used mHealth application iCBT for eight weeks and saw a reduction of the baseline GAD-7 score by 35% (Brewer, 2021).

mHealth perceived usefulness, ease of use, and user feedback

Guided mHealth tools can help empower participants to manage their own symptoms of anxiety and increase their self-efficacy provided they are perceived useful (Moberg et al., 2019) Due to insurance not being accepted and virtual counseling not being available in the area, the application was not as valuable as hoped within the free version. Responses indicated that as participants reached goals or were discouraged by a lack of available services in their area, the mHealth application usage decreased. For the mHealth application to improve access to mental health services and decrease anxiety symptoms, regular usage of the application is recommended.

The Sanvello© application intervention was rated as being easy to use and clear and understandable. In addition, the perceived usefulness was rating being able to improve performance. However, participant open-ended responses indicate that that application was difficult to navigate and required additional time to learn how to navigate.

Limitations

Several project limitations should be considered in interpreting results. Although previous studies indicate that the model length of time should be between 4 to 8 weeks, this pilot was just under that timeline due to organizational constraints. The time constraints are due to delayed implementation and the time being shortened due to winter break and finals. Because 25% of participants were receiving other mental health services outside of the mHealth

application, it is possible that some of the effectiveness of the application was owed to those services. Individual data was not captured, so there is no way to compare data sets on effectiveness, perceived usability, perceived ease, or GAD-7 scores. Future quality improvement work includes improving the education of mHealth tools and integrating mHealth tools into health services workflows.

Another issue is that the educational sessions did not occur in person due to the restrictions placed within the organization concerning safety concerns with the COVID-19 pandemic. Instead, educational sessions were emailed to the stakeholder to send to the team members, which was then not distributed to the entire team. During the implementation phase, small sessions and social media posts were the primary forms of communication. Weekly email blasts did not occur, with the primary focus being social media accounts. The post-intervention survey sample size was also small, with participants not answering every question within the survey.

The convivence sample of college community members recruited for this project is a potential source of bias as participants elected to self-enroll. Participants who elected to self-enroll may have been more interested and comfortable with mHealth applications or those who have already sought mental health treatment due to a diagnosed illness. Lastly, the TAM model was not originally used in the assessment of mobile applications in the assessment of mobile applications and is a predication and explanation model of user's reaction to health applications; the addition of another model is recommended (Ammerlaan et al., 2014)

Conclusions

Digital health tools such as mHealth applications offer a wide variety of features that effectively improve access to mental health services, representing an essential innovation for improving the overall mental wellness in the population. Outcomes from this quality improvement project have led to advancement in how mental health services are accessed and promoted within the organization. The application can be effectively incorporated into the counseling care model and be used as an adjunct therapy to lessen the burden on health care providers. It can be potentially time-saving for health care providers and help to decrease barriers to treatment.

As a secondary outcome, it is noted that participants' telehealth services were desired with the mHealth application, indicating that participants do have a desire to seek treatment for mental health concerns. Therefore, this application, along with other mHealth tools, could be offered to those within the organization to those awaiting traditional services or those referred to the health services department for follow-up.

As the access to mental health care services improves, it optimizes mental health care by making them easier and more accessible, the community will be more likely to seek treatment and participate in mental wellness activities and reduce symptoms of anxiety.

An implication for practice is participants should be encouraged to utilize mHealth tools before the symptoms of anxiety reach a level where it is impacting day-to-day activities, such as a score of severe anxiety as the baseline GAD-7 assessment indicated. An implication for further research and QI should focus on educating the community on how mental health impacts everyday activities and performance as well as how mHealth tools can help to improve access to mental health care.

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Appendix A

Recruitment Email

Dear NHTI Concord's-Community College member,

I am a doctoral student at the University of New Hampshire and I am conducting a quality

improvement project to find out if the mobile health (mHealth) application Sanvello© can

improve the access to support mental health services for anxiety. I am writing to invite you to

take part in this survey. My goal is to have approximately 50 participants complete the survey.

You must be at least 18-years-old to participate in this study and a current student, staff or

faculty member at NHTI-Concord's Community College.

The survey will take about 10-15 minutes and will ask basic information such as if you use a

smartphone and if you have used the application Sanvello©. It will also ask you for basic

information about you and questions about your perception of anxiety using the General Anxiety

Disorder -7 assessment tool. There are no direct or immediate benefits for completing the survey.

However, the information submitted will be used to improve the access to mental health services

at NHTI-Concord's Community College.

Participation in this survey is completely voluntary. Your responses will be anonymous. If you

agree to complete the survey, you may refuse to answer any question and/or if you change your

mind, you may also withdraw from completing the survey at any time.

The information that is provided will not be identifiable but will be treated confidentially and all

written and recorded information will be stored securely. Recorded and transcribed information

will be stored on a personal laptop that is password protected.

I will report the summary data to NHTI-Concord's Community College to identify ways to

improve access to mental health care services.

By continuing with the survey, you verify that:

You are at least 18 years of age.

You are a current student, staff or faculty at NHTI.

Have a smart phone.

Have never used the Sanvello© application and are prepared to download the Sanvello©

application at the end of this survey, it should take you about 20 minutes to complete the survey

and download the application.

You understand the purpose of this survey.

You freely and voluntarily choose to participate in this survey.

Appendix B

GAD-7 Survey

Over the last two weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious, or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid, as if something awful might happen	0	1	2	3

Appendix C

Post Intervention Survey

Which version of the Sanvello© Application did you use?

- Used free version

- Purchased 8.99 monthly subscription/53.99 per year

- Purchased 50.00 monthly subscription/350 per year

How often did you use the Sanvello© Application?

- Under four weeks

    o What was behind your decision to stop using the Sanvello© Application?

- Four weeks

    o 1-2 times a week

    o 3-4 times a week

    o 5-6 times a week

    o Daily

Did you also use other mental health services while using this application such as counseling, or therapy?

- Yes

- No

Do you feel the Sanvello© mHealth Application improved your access to mental health services?

- Yes

- No

Please provide any comments or thoughts on the Sanvello© Application.

Appendix D

TAM Survey

	Extremely Likely	Quite Likely	Slightly Likely	Neither	Slightly Unlikely	Quite Unlikely	Extremely Unlikely
Using Sanvello© in my job would enable me to accomplish tasks more quickly							
Using Sanvello© in my job would improve my job performance							
Using Sanvello© in my job would increase my productivity							
Using Sanvello© would enhance my effectiveness on the job							
Using Sanvello© would make it easier to do my job							
I would find Sanvello© useful in my job							
Learning to operate Sanvello© would be easy for me							
I would find it easy to get Sanvello© to do what I want it to do							
My interaction with Sanvello© would be clear and understandable.							
I would find Sanvello© would be clear and understandable							

It would be easy for me to become skillful at using Sanvello©						
I would find Sanvello© easy to use						