

Mental Health Application in Anxiety

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### Abstract

The shortage of providers, therapists, and long waiting times for appointments in the United States is growing. Mental health technology applications (apps) expand the strategies available to people with mental health conditions to achieve their goals for well being through self-management of symptoms. A project was undertaken at an outpatient behavioral setting in urban Arizona to determine the use and effectiveness of a mental health app called insight timer to reduce anxiety symptoms. Adult clients with anxiety symptoms were provided with the insight timer app to use over a period of eight weeks. Anxiety was evaluated with the GAD-7 scale initially and after the eight weeks of app use. Usability and the quality of the app were assessed with an app rating scale at the end of the eight weeks. Findings of the Wilcoxon Signed Ranks test indicated changes in pre and posttest assessment scores as significant in all the seven clients who completed the app use. Besides, Cohen's effect size value suggested large clinical significance in these same assessment parameters. Evidence suggests that the use of an evidence-based app can effectively reduce anxiety symptoms and improve the quality of life. The use of mental health apps like insight timer could reduce health care costs associated with unnecessary hospital admissions as well as re-hospitalizations. The routine use of apps such as the insight timer may also be beneficial to all the clients who have anxiety symptoms in outpatient as well as inpatient settings.

*Keywords:* mental health, apps, insight timer, anxiety, anxiety symptoms

Mental disorders are one of the most common health conditions in the United States (U.S.) (Centers for Disease Control and Prevention [CDC], 2018). World Health Organization (WHO, 2018) reports anxiety as the most common mental disorder globally. It affects not only the individual but also the homeostasis of the family and community. Anxiety disorders are highly treatable, but only 36.9% receive treatment (ADAA, 2018). Anxiety disorders cost the global economy, the equivalent of 1 trillion U.S. dollars annually (WHO, 2018). The purpose of this project was to evaluate the effectiveness of evidence-based mental health apps to reduce anxiety among adult clients in an outpatient health care setting.

### **Background and Significance**

The disability experienced with mental disorders is continuing to grow with crucial impacts on health globally (World Health Organization [WHO], 2020). According to the Anxiety and Depression Association of America (ADAA, 2018), about 40 million adults above the age of 18 are affected by this disorder. It is a debilitating disorder as it affects the ability to function and also impacts the quality of life. The impact on the economy from mental illness is multifactorial, including the cost of treatment, employment loss, as well as indirect costs due to chronic disability. There are many treatment options available for anxiety, including psychotherapy and medications. Stigma, limited access to treatment, and financial issues are some reasons provided for lack of care. Stress management techniques and meditation help cope and manage anxiety (American Psychiatric Association [APA], 2017).

Talk therapy, including a combination of cognitive and behavior therapy (Cognitive Behavior Therapy [CBT]), is the most effective nonpharmacological treatment for anxiety (NAMI, 2018). However, evidence suggests that CBT, meditation, and other relaxation

techniques can reduce anxiety symptoms, access to these interventions constrained by cost and feasibility (Chandrasekhar, 2018).

In this instance, the use of mobile apps to introduce these interventions garners attention as an adjunct to in-person therapy. This project is discussing the growing epidemic of anxiety in adults and learning the outcome benefits of using mental health apps in treating anxiety disorders. There is no internal evidence of the use of a mental health app by psychiatric providers at the proposed site of this project.

The gaps mentioned above in mental health has led to the clinically relevant PICOT question: In adults with anxiety symptoms (P) how does use of an evidence-based app (I) compared to no app use (C) affect anxiety score (O) after eight weeks of app use (T)?

### **Evidence Synthesis**

The PICOT question led to an exhaustive search of the literature to find evidence to support the use of mental health app in reducing/relieving anxiety. A thorough review of the most current evidence was completed to answer the PICOT question. An extensive search was done on three databases, like the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PsycInfo, and Pub Med. These databases selected for their relevance to the topics of mental health app and anxiety. All databases accessed through the Arizona State University library website via an advanced search option. The databases searched using combinations of the key terms that addressed all aspects of the PICOT question: anxiety, adults, mobile app, and mental health app. The outcome was specified using the words: better quality of life and reduction in anxiety. Filters applied included date of publication (2015 to 2019), English language, and peer-reviewed journal articles. Mesh and Boolean terms were used to broaden the

search. Studies included in the review related to the topic and evaluated the relationship between specific PICOT question and the problem.

Given the shortage of mental health providers and therapists, mental health apps have emerged as a beneficial tool to bridge the gap in mental health. Mobile apps have significant potential to deliver effective mental health interventions (Chandrasekhar, 2018). Mobile phones have become a desegregated part of the personal, social, and occupational life of the global population. Numerous mental health apps have emerged in recent years and accessible to mobile phone users (Hoffman et al., 2019).

Multiple databases were searched for articles for evidence and were analyzed and synthesized to get a concrete foundation of evidence for the benefits of clients. A rapid critical appraisal tool by Melnyk and Fineout-Overholt (2011) was used to evaluate the quality of the collected articles and ten materials chosen for evidence synthesis. All the studies assessed in the evidence synthesis were demonstrating the anxiety reduction by the use of a mental health app. There was heterogeneity in the measurement tool; however, there were some commonalities as well. The measurement tools used included Generalized Anxiety Disorder 7(GAD-7) in four of the studies; Depression Anxiety Stress Scales (DASS) in one of the studies, and the rest were questionnaire surveys. The symptoms of anxiety were the primary dependent variable assessed in all of the reviews. The app- only intervention was demonstrated in the majority of the synthesized article, whereas three of them had an add on intervention such as the use of anxiety medication.

According to Chandrasekhar (2018), mental health apps use has significantly reduced anxiety and consequently improved quality of life. A study shows that among BH providers, 83% of providers use mental health app for anxiety, and 66% of participants reported that the

app was useful in managing stress and anxiety (Hoffman et al., 2019). Another study demonstrated high feasibility and accessibility of the app, and stress ratings significantly reduced among app users (Payne, Lister, West, & Bernhardt, 2015).

### **Theoretical Framework & Implementation Framework**

The John Hopkins Nursing Evidence-Based Practice (JHNEBP) model is a powerful problem-solving perspective and has available tools to direct clinical decision making (Reavy, 2016). The goal of this Evidence-Based Practice (EBP) is to promote effective nursing interventions, efficient care, and patient outcome. Moreover, to provide the best available evidence for clinical, administrative, and educational decision making. JHNEBP is explicitly designed to meet the needs of the nurse who is practicing and also to incorporate the best practices to patient care. A three-step process structures this EBP model, which are Practice question (P), Evidence (E), and Translation (T). The translation phase is transforming knowledge into an action plan and evaluation of the process. JHNEBP model is useful for practicing nurses and students in implementing EBP process (Reavy, 2016). This framework fits with the current setting and population. On the other hand, the tools in the frame focus on stakeholders, which is beneficial for patient outcomes and providers. Moreover, the evidence supports clinical decision making and meets the needs of the patient effectively, safely, and promptly.

Dorothea Orem's self-care theory is the theoretical framework that underpins the project. The primary assumption of this theory is that people are distinct individuals, and they should be self-reliant and responsible for their care. A person's knowledge of health care problems is necessary for promoting self-care behaviors. Orem's theory is based on self-care requisites, which are the basic needs of individuals at all stages of life. Orem identifies that specific

technology developed by members of the health profession with or without the use of instruments.

Moreover, Orem describes the health care needs to be met by a nurse in specific situations (Nursing theories, 2012). The concept of the current project is using a mental health meditation app daily via smart phone for eight weeks. To perform this, patients need to be self-reliant and be responsible for their care. The client is taught on the importance of self-monitoring of anxiety and practicing meditation daily. Clients are reminded daily electronically about the meditation via phone, which encourages the client.

### **Methods**

Collaborative Institutional Training Initiative (CITI) completed on 6/17/2019 as a foundational training in human subjects' research, which includes the historical development of human subject protections, ethical issues, and current regulatory and guidance information. Approval received from the integrated healthcare at South mountain location in fall 2018, which was the clinical site to conduct this project. The targeted population included in this project was 20 adults who are 18 years or older, able to speak, read, and write English. The other inclusion criteria were that they have to own mobile phones to download the app and have anxiety symptoms with a possible diagnosis of generalized anxiety disorder, panic disorder, or unspecified anxiety disorder. There were no physical risks associated with participating in this project. Some participants may experience some psychological discomfort when answering the survey questions. It was informed that they could skip any questions they wish not to respond, and their responses will be kept confidential. The student collected data from the participant's self-report and the charts (medical records). Project data collected via questionnaires was saved and managed in a secure computer accessible by only the mentor and the student.

A Health Insurance Portability and Accountability Act (HIPAA) compliant and encrypted server, multilevel password protection, Enterprise-level firewalls, and antivirus barriers will be used to secure access to the data. Data will be retained for three years by the mentor and the student. In keeping with the university IRB requirements, all personnel who have access to the data have formally trained in the protection of human subjects before working with the participants or having access to the data. The risk associated with breaches of confidentiality or anonymity will be minimized by the precautions described above to protect the data. Although the proposed project has minimal potential for adverse events, the student and the mentor was monitoring participants very carefully during the study period. Patients who could not receive timely treatments or have difficulty talking to a mental health provider, including counselor or therapist, may find it useful as the app, accessible, and feasible. Given the shortage of mental health providers and the long waiting list for treatments, mental health apps like “Insight Timer” will help address the gaps in mental health care.

A flyer that described the purpose of the project, the procedure, benefits, and potential risk of participating in this project was distributed at the clinical site to the potential participants. The providers also gave project information to patients; patients contacted the student if they were interested in participating in the project. The student got consent from eligible patients, and participants created a “nickname” for themselves, which used as identification throughout the project. Participants downloaded a free mental health app “Insight Timer” to their mobile phone and tried it with the student to ensure it is functional. Each participant was instructed to practice meditation by using the app for 5 minutes per day for eight weeks total. Participants filled out a simple time log of the time and duration of using the app during the 8-week project period. Besides a time log that helps participants track how much time they use this app during the eight



weeks, participants filled out pretest (T1) and post-test (T2) surveys to evaluate their anxiety symptoms and medication use. The questionnaire will take about 5-10 minutes to complete.

The pretest (T1) includes socio-demographic characteristics (birth year, race/ethnicity), medication information (use of anti-anxiety medications), and evaluation of anxiety symptoms using GAD7. The post-test (T2) includes evaluation using GAD7, the use of medicines, and feedback on the app using an app rating scale. The student also gathered medication information from participants' charts before they start using the app, and after the project is completed. Research synthesis for this project was from August 2018 to May 2019. IRB processing was from June 2019 to October 2019. Recruitment and implementation started in October 2019, and the post-test was done in December 2019. A non-parametric test was used due to the small sample size. Wilcoxon Signed-Rank test utilized to describe key variables and to compare scores over time.

Moreover, it was used to compare two correlated groups with ordinal data. The student planned to pay an incentive to the participants from her fund upon completion of the project. Each participant received a \$5 gift card as a token of appreciation for participating after the completion of the project.

### **Results**

Twenty adult clients were successfully recruited to participate in the intervention and completed the pretest (T1). Of the twenty clients enrolled, seven (35%) completed the eight weeks intervention and post-test (T2). The other 65% did not respond with the completed post-test after the eight weeks of intervention for unknown reasons. Daily automatic reminders and weekly follow up text was sent to every client regularly. The clients that completed the intervention were from the age of 20-45, and two (28.6%) were male, and five (71.4%) were

female. The educational level of the participants was as follows: one participant (14.3%) with less than high school education, three (42.9%) has completed high school education, two (28.6%) has completed associated degree, and one (14.3%) participant has master's degree. The majority (6) of the participants (85.7%) had Generalized Anxiety Disorder (GAD), whereas one participant (14.3%) had Panic disorder.

Pre and post mean scores on the GAD-7 Scale were compared to evaluate the participant's anxiety level. The reported T1 score ranged from 6 to 20, and the frequency was 20, whereas the T2 score ranged from 0 to 18. The T2 scores were significantly lower than T1, and the frequency was seven. The mean pretest score of T1 was 15.57 (SD = 4.928), and the mean post-test score of T2 was 7.71 (SD = 5.707). The Wilcoxon Signed Ranks test indicated changes in T1 and T2 scores as significant and showed a *p-value* of .028, which is statistically significant.

Descriptive statistics utilized to examine the usability and acceptability of the 'Insight timer app' measured by a Mobile App Rating Scale. All the participants were satisfied with the performance and functionality of the app. The majority (85.7%) of participants agreed that the app "works well," and 14.3% stated that the app is "mostly functional." All the participants (100%) reported that the app was easy to learn and use, easy to access, and the guided conversation was easy to follow. For the question, "will you recommend this app to other patients?" clients agreed by stating, "definitely, and maybe." For the question "will you use the app in the next 12 months," clients responded by saying, "definitely (71.4%) and maybe (28.6%)". The majority of the clients (85.8%) rated four stars for the app, whereas 14.3% rated three stars, and all (100%) clients stated that the app was "helpful." All the participants (100%) agreed that it is good to incorporate this app into their service. Reduction in GAD-7 scores is

evidence showing that the clients are self-reliant and are responsible for their care, which is the major assumption of the theoretical framework. All the participants except one were using anxiety meds before and throughout the intervention.

On the other hand, they did not have an appointment with the provider during this eight-week intervention for a medicine change. The mental health provider in the outpatient setting was made aware of this evidence-based app and the result of this project. The provider was happy to recommend this app (insight timer) for his future clients. A flyer explaining how to use this app was placed on the bulletin board in the outpatient setting

### **Discussion**

Mental health apps provide compelling opportunities to look after the mental health and wellbeing of the users. The number of mental health apps available for users has increased tremendously due to the accessibility to mobile phones. Mental health apps must aim to prevent emotional and mental health problems and sustain the wellbeing of the users. Moreover, these apps must be customized for individual needs and have the ground of CBT techniques that are evidence-based. Mental health apps and other technology-based solutions have the potential to play a vital role in the future of mental health. This project intended to determine if the use of the ‘insight timer’ app, enabled the clients to decrease their anxiety. The project also aimed to determine the functionality, quality, and feasibility of the app among project participants.

Evidence suggests that the use of the ‘insight timer meditation app’ can reduce anxiety in adult patients. The significantly large effect size of the GAD-7 scale score in assessing anxiety shows the clinical significance of the app use in reducing anxiety. The majority of the clients stated that the app was helpful, easy to use, and want to recommend the app to other patients. The result shows the quality, functionality, and the feasibility of the app. Smartphone-based

mental health apps portray an excellent opportunity to reveal the possibility and quality of mental health treatment.

The findings of this project are timely and relevant as long as anxiety remains a global mental health problem. Effective and consistent use of the app can reduce the symptoms of psychological disturbances and improve quality of life. The reduction in symptoms eventually brings forth positive outcomes in the client's life, family, and the community. The utilization of an evidence-based mental health app can also significantly reduce health care costs associated with unnecessary hospital admissions as well as re-hospitalizations. Additionally, they are cost-effective and address the gap in mental health treatment. Evidence-based mental health mobile apps are beneficial for patients for empowerment and to reach therapeutic goals. In consideration of the findings of this project, it is reasonable to suggest that the implementation of an evidence-based mental health app such as the 'insight timer' could be beneficial to additional inpatient and outpatient behavioral health facilities. Though patients use the apps on their own time without any clinical supervision, they are showing to be promising in the field of mental health.

Several strengths can be extracted from this project. The project demonstrated statistically significant findings within an outpatient behavioral setting. It is a global struggle to reduce anxiety in mental health patients. It is also reasonable to conclude that the use of the app can be successful among inpatients and in other settings where clients are struggling with anxiety. The clients who participated in this project stated that the use of the app is highly beneficial, which promotes the routine use of this tool.

Although the results of this project are promising, it had a relatively small sample size of seven participants. Further studies with large sample size are indicated to determine the generalizability of the current findings. Besides, many participants suggested that the integration

of the app into psychiatric services may help them as well as other clients with similar symptoms. The mental health app should be integrated into the electronic medical record system of the facility to promote consistency and sustainability.

### **Conclusion**

The management of anxiety and other mental disorders are hard to handle due to the lack of availability of providers and therapists. Current evidence suggests that the use of evidence-based mental health app like 'insight timer' can reduce the severity of anxiety. Although it is difficult to choose an effective mental health app, it is crucial to select one which is evidence-based or one which was useful for another client who had similar symptoms. It is evident that mobile apps have higher compliance rates and eventually have the potential to improve positive patient outcomes. Reduction in anxiety symptoms can bring forth a better quality in personal and social life.

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Appendix A

Database Search Strategy

CINAHL

The screenshot displays the EBSCOhost search interface. At the top, a navigation bar includes links for 'New Search', 'Publications', 'CINAHL Subject Headings', 'Evidence-Based Care Sheets', and 'More'. On the right, there are links for 'Sign In', 'Folder', 'Preferences', 'Languages', 'Ask a Librarian', and 'Help'. The search bar contains the query 'mental health app in anxiety' and a 'Search' button. Below the search bar, there are links for 'Basic Search', 'Advanced Search', and 'Search History'. The main content area shows 'Search Results: 1 - 8 of 8' and a 'Relevance' dropdown menu. The first result is titled '1. Clinical or gimmickal: The use and effectiveness of mobile mental health apps for treating anxiety and depression.' and is marked as an 'Academic Journal'. The abstract text reads: '(includes abstract) Marshall, Jamie M; Dunstan, Debra A; Bartik, Warren; Australian & New Zealand Journal of Psychiatry, Jan2020; 54(1): 20-28. (9p) (Article - review) ISSN: 0004-8674 AN: 140476189 Abstract: Objectives: The increase in ownership of smartphones and tablet devices has seen a worldwide government push, championed by the World Health Organization, towards digital healthcare services generally. Mental health has been a strong presence in the digitisation of healthcare because of the potential to solve some of the difficulties in accessing face-to-face services. This review summarises the recent history of e-mental health services and illuminates two very different paths. The first is the considerable amount of research that has proven the effectiveness of many online mental health programmes for personal computers and laptops,'. On the left side, there is a 'Refine Results' panel with sections for 'Current Search' (showing the search phrase 'mental health app in anxiety'), 'Expanders' (with an 'Apply equivalent subjects' button), and 'Limit To' (with options for 'Full Text' and 'References Available'). On the right side, there are sections for 'EJS E-Journals' (listing 'Clinical or gimmickal: Th...', 'User Engagement in Mental...', and 'A review of popular smart...') and 'RIPM eLibrary Widget'.

Appendix B

Database Search Strategy

PsycInfo

The screenshot shows the ProQuest APA PsycInfo search interface. At the top, the ProQuest logo is on the left, and navigation icons (refresh, home, user, help) are on the right. Below the logo, the text 'APA PsycInfo®' is displayed, along with links for 'Basic Search', 'Advanced Search', 'About', and 'Change databases'. The American Psychological Association logo is also visible. The search bar contains the query '(anxiety disorders) AND (smartphone app) AND benefits'. Below the search bar, there are filters for 'Additional limits - Date: After January 01 2015; Language: English; ...' with a 'Show all' link. The results section is titled '7 results' and includes options to 'Modify search', 'Recent searches', and 'Save search/alert'. On the left side of the results, there are filters for 'Sorted by' (set to 'Relevance'), 'Limit to' (with 'Peer reviewed' checked), 'Source type' (set to 'Scholarly Journals (7)'), and 'Publication date'. The main results area shows two entries:

1. Adding a **smartphone app** to internet-based self-help for social **anxiety**: A randomized controlled trial  
 Boettcher, Johanna; Magnusson, Kristoffer; Marklund, Arvid; Berglund, Ellinor; Blomdahl, Rikard; et al.  
**Computers in Human Behavior** Vol. 87, (Oct 2018): 98-108.  
 ...**Anxiety Disorder** (SAD). 'Challenger' is an **app** promoting exposure exercises in...  
 ...the additional **benefit** of using the **app** as adjunct to Internet-based unguided...  
 ...significantly less social **anxiety** (  $d = 0.30$ ). At week 14, decreases in social...
2. Acceptability of mHealth augmentation of Collaborative Care: A mixed methods pilot study  
 Bauer, Amy M; Iles-Shih, Matthew; Ghomi, Reza Hosseini; Rue, Tessa; Grover, Tess; et al.

Appendix C

Database Search Strategy

PubMed

The screenshot shows the PubMed.gov search interface. The search bar contains the query: ((Anxiety) AND Benefits) AND Mental health app. The search results show 22 results. The first result is titled "Mental Health Mobile Phone App Usage, Concerns, and Benefits Among Psychiatric Outpatients: Comparative Survey Study." by Torous J, Wisniewski H, Liu G, Keshavan M. The abstract text is partially visible, discussing patient concerns about privacy and benefits of mental health apps. The interface includes filters for text availability (Abstract, Free full text, Full text) and a feedback button.

PubMed.gov

Search

Advanced Create alert Create RSS User Guide

Save Email Send to Sorted by: Best match

MYNCBI FILTERS

RESULTS BY YEAR

Year	Results
2016	1
2017	2
2018	10
2019	6
2020	3

TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

ARTICLE ATTRIBUTE

22 results

**Mental Health Mobile Phone App Usage, Concerns, and Benefits Among Psychiatric Outpatients: Comparative Survey Study.**  
1  
Torous J, Wisniewski H, Liu G, Keshavan M.  
JMIR Ment Health. 2018 Nov 16;5(4):e11715. doi: 10.2196/11715.  
PMID: 30446484 **Free PMC article.**  
Patients at both clinics were most concerned about privacy of **mental health** apps, although those at the state DMH clinic viewed cost savings as the greatest **benefit** while those at the private clinic reported time as the greatest **benefit**. **CONCLUSIONS:** High interest in **mental health** apps does not automatically translate into high use. Our results of low but similar rates of **mental health app** use at diverse clinics suggests DMH patients with largely psychotic disorders are as interested and engaged with apps as those in a private insurance clinic treating largely mood and **anxiety** disorders. ...  
Cite Share

**User Engagement in Mental Health Apps: A Review of Measurement, Reporting, ...**

Feedback

Appendix D

Table 1

Synthesis Table

Author	Firth	Pham	Hoffman	Payne	Rathbone	Linardon	Lee	Rubanovich	Mohr	Almodovar
Year	2017	2016	2019	2015	2017	2019	2018	2019	2017	2018
Design/LOE	SR/I	RCT/II	PS/II	SR/I	SR/I	RCT/II	PS/VI	SS/II	PS/II	RLS/II
<b>Study characteristics</b>										
<b>Demographics</b>										
Age	18-60	18-60	18-70	NA	NA	NA	15-24	19-75	>18	>18
<b>Setting</b>										
Health Center	Internet	Internet	x	Internet	Internet	Internet	x	x	x	x
Sample Size/ # of Studies	9	63	56	24	27	66	206	176	99	34
Measuring Tools	GAD-7, DASS	Questionnaire	Feedback survey	Review	DASS	Meta analysis	PSS	GAD-7	GAD-7	GAD-7
Duration of study	2 months	4 weeks	2 months	10 weeks	6 months	11 weeks	8 weeks	12 weeks	8weeks	6 weeks
<b>IV -Intervention</b>										
App only		x	x	x	x	x	x	x		

**Key:** DASS-Depression Anxiety Stress Scale GAD-7-Generalized Anxiety Disorder-7 NA-Not Applicable PS-Pilot Study PSS-Perceived Stress Scale RCT-Randomized

Controlled trial RLS-Retrospective Longitudinal Study SR-Systematic Review SS-Survey Study Y-Yes

App& meds	x								x	x
DV										
Anxiety Symptoms	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Feasibility & Accessibility	NA	Y	Y	Y	Y	NA	Y	NA	NA	NA

**Key:** DASS-Depression Anxiety Stress Scale GAD-7-Generalized Anxiety Disorder-7 NA-Not Applicable PS-Pilot Study PSS-Perceived Stress Scale RCT-Randomized

Controlled trial RLS-Retrospective Longitudinal Study SR-Systematic Review SS-Survey Study Y-Yes

*Appendix E*

Figure 1



Dorothea Orem's Self Care Deficit Theory (Nursing Theories, 2011).

Appendix F

Figure 2

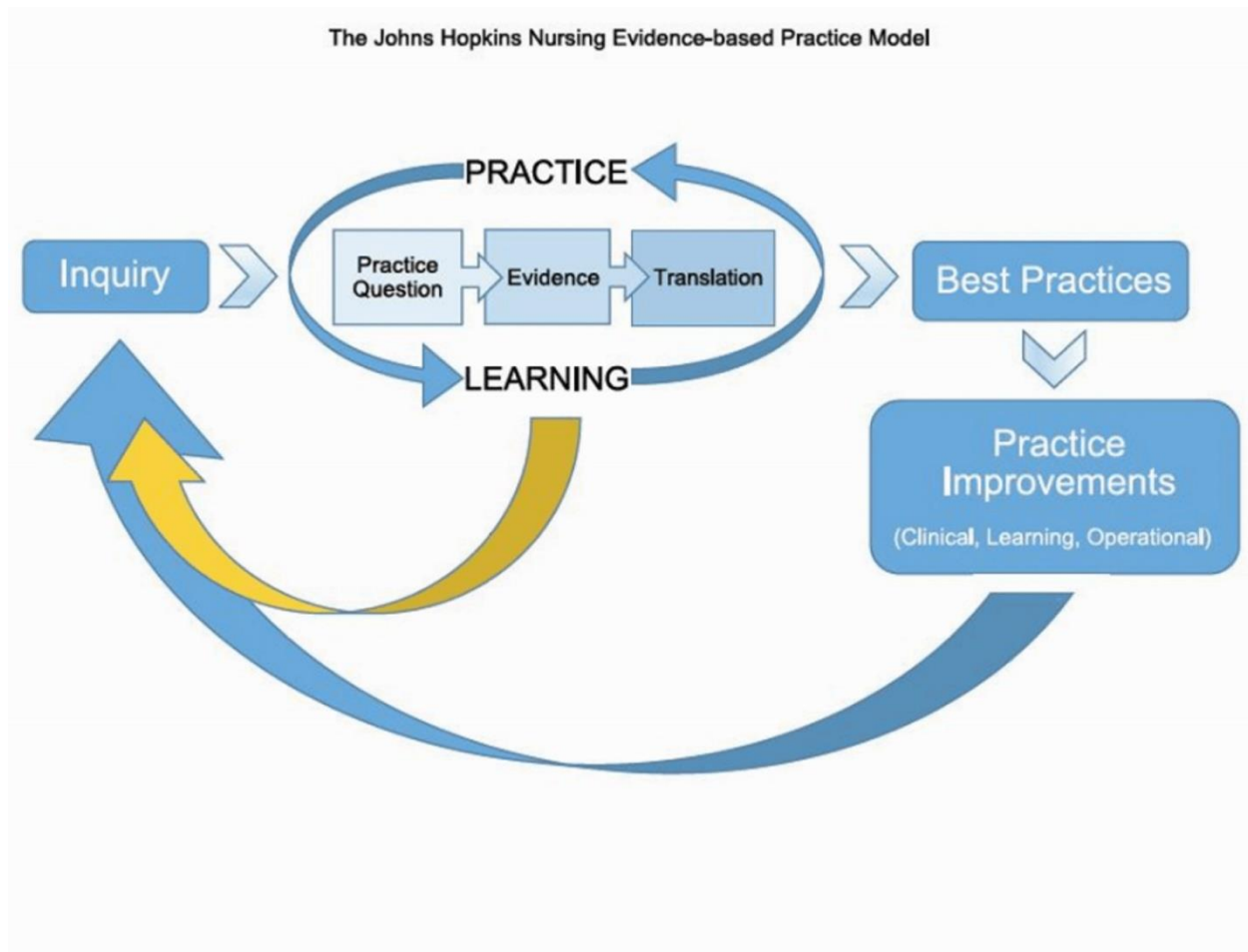


Figure 2. The model is designed for implementation in smaller settings, making it ideal for use in this particular project (Center for evidence based practice, 2017).

*Appendix G*

Table 1

Results of pre and post GAD-7 anxiety score

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
T1 total anxiety score	7	15.57	4.928	6	20
T2 total anxiety score	7	7.71	5.707	0	18



*Appendix G*

Table 2

T2 total anxiety score - T1 total anxiety score	
Z	-2.197 <sup>b</sup>
Asymp. Sig. (2-tailed)	.028

*Appendix G*

Table 3

<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
id	7	4	10	7.00	2.160
posttest	7	03-JAN-20	30-JAN-20	17-JAN-20	12 18:16:52.240
age	7	20	45	32.14	8.513
participant's gender	7	0	1	.71	.488
education level	7	0	4	1.57	1.272
main diagnosis	7	1	2	1.14	.378
T1 Feeling nervous, anxious, or on edge	7	1	3	2.57	.787
T2 Feeling nervous, anxious, or on edge	7	0	3	1.57	1.272
T1 Not being able to stop or control worrying	7	0	3	2.14	1.215
T2 Not being able to stop or control worrying	7	0	2	1.00	.816
T1 Worrying too much about different things	7	2	3	2.86	.378
T2 Worrying too much about different things	7	0	3	.86	1.215
T1 Trouble relaxing	7	0	3	2.43	1.134
T2 Trouble relaxing	7	0	3	1.00	1.414
T1 Being so restless that it's hard to sit still	7	0	3	1.71	.951

T2 Being so restless that it's hard to sit still	7	0	2	1.29	.756
T1 Becoming easily annoyed or irritable	7	1	3	2.00	1.000
T2 Becoming easily annoyed or irritable	7	0	2	.86	.900
T1 Feeling afraid as if something awful might happen	7	0	3	1.86	1.215
T2 Feeling afraid as if something awful might happen	7	0	3	1.14	1.345
T1 total anxiety score	7	6	20	15.57	4.928
T2 total anxiety score	7	0	18	7.71	5.707
how was performance of the app	7	2	3	2.86	.378
How easy was the app to learn and use?	7	3	3	3.00	.000
How accessible was the app?	7	3	3	3.00	.000
Guidance conversation was easy to follow?	7	3	3	3.00	.000
functionality mean	7	3	3	2.96	.094
will you recommend this app to other patients	7	2	3	2.57	.535
Will you use the app in the next 12 months?	7	2	3	2.71	.488
What is the overall rating of the app?	7	3	5	4.29	.756

0 "not helpful" 1 "helpful"	7	1	1	1.00	.000
Valid N (list wise)	7				

GAD7 total score: Scores of 5, 10, and 15 represent cut-points for mild, moderate, and severe anxiety.