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Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Navy Medicine Readiness and Training Command, Portsmouth

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Abstract

Site: Navy Medicine Readiness and Training Command (NMRTC) Portsmouth

Project Title: Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A Bridge Between Primary Care and Specialty Care

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Problem: Depression is a serious medical issue that negatively impacts military members. Cognitive-behavioral therapy (CBT) is an evidence-based treatment for depression that is typically delivered by a mental health specialist; however, there is often a delay in specialty care due to access to care challenges. Internet-delivered CBT (iCBT) is an effective intervention that can be initiated in the primary care setting to improve depressive symptoms while waiting for specialty care.

Purpose: Our goal was to use an educational intervention to increase providers' self-reported frequency of use of iCBT, increase knowledge about the VA & DoD CPG recommendation and delivery resources, and increase providers' perception of the benefit and intent to use iCBT in clinical practice.

Project Design: A pre-intervention Likert survey was administered, followed by the intervention, a post-intervention survey, three weekly reinforcement emails, and a four-week post-intervention survey.

Analyzing the Data: Differences in Likert scores for key measures pre-intervention, post-intervention, and at four-week follow-up.

Results: The initial sample included eight providers, with 62% retention at the time of the final survey. The results showed an initial decrease on the post-intervention survey; however, on the

four-week follow-up survey there was an increase in all outcome measures -- provider knowledge, perception of benefit, perception of ease, and intent to use.

Conclusions: Eighty percent of providers reported they were using iCBT in clinical practice, and 100% reported they intend to use iCBT in the future, an increase of 30% and 12.5% respectively. These results demonstrate the efficacy of the intervention and the practicality of implementing the use of iCBT in primary care.

Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Navy Medicine Readiness and Training Command, Portsmouth

Depression is a common and serious medical disorder that negatively affects how individuals think, act, and feel. Approximately one in five people will experience at least one episode of depression, with the most likely period of presentation occurring between mid-adolescence and mid-forties (Malhi & Mann, 2018). Fortunately, depression is among the most treatable mental health disorders; between 80 percent and 90 percent of individuals diagnosed with depression eventually respond well to treatment (American Psychiatric Association, 2019).

One of the first-line recommended treatments for mild to moderate depression is evidence-based psychotherapy (e.g., cognitive behavioral therapy [CBT], acceptance and commitment therapy, behavioral activation, interpersonal therapy, problem-solving therapy, and mindfulness-based cognitive behavioral therapy) (Department of Veterans Affairs & Department of Defense [VA & DoD], 2016). Cognitive-behavioral therapy (CBT) is a form of psychotherapy that can be delivered via a variety of methods and is aimed at reframing a depressed patient's negative perceptions. CBT is an efficacious initial treatment option in patients with depressive disorders (Gautam, Gautam, Vahia, & Grover, 2017). Although CBT is generally initiated following an appointment with a mental health provider, studies suggest that internet-delivered CBT (iCBT) is an effective alternative with high patient satisfaction (Lamb, Pachana, & Dissanayaka, 2018). In fact, in the *VA/DoD Clinical Practice Guideline (CPG) for the Management of Major Depressive Disorder*, the VA & DoD (2016) strongly recommend iCBT as an adjunctive treatment when standard psychotherapy is not readily available; furthermore, the CPG emphasizes iCBT's efficacy in significantly reducing severity of depression in patients

when compared to waitlisting or treatment as usual. Additionally, iCBT is an exceptional resource for patients declining a mental health referral for reasons such as paucity of time, cost, negative stigma, and counseling mistrust (Health Quality Ontario, 2019).

Providing primary care patients with access to iCBT prior to referral or initial visit with a mental health provider provides an immediately accessible technologically advanced evidence-based treatment that is cost-effective (Kladnitski, Smith, Allen, Andrews, & Newby, 2018). The evidence on the efficacy of iCBT is robust; however, clinician training and expertise are major factors in whether or not iCBT is used in the management of depression (Gautam et al., 2017).

Significance of Problem

The World Health Organization projects that depression will rank first as the burden of cause of disease by 2030 (Malhi & Mann, 2018). According to Dieleman, Baral, and Birger (2016) the cost of depressive disorders in 2013 was $71 billion dollars in healthcare spending alone; making it the sixth-most-costly illness in the United States. This burdensome health illness can be compounded with delays in treatment. It is estimated that every day a patient is unable to schedule their mental health appointment, that 1% of those patients will fail to present for their initial evaluation with a mental health provider (Dampier, 2018). Additionally, mild depression: can progress to more severe forms of depression and other psychiatric disorders, may be associated with an increase in all-cause mortality, is a risk factor for suicide, and is associated with increased health care costs (Lyness, 2020).

Contact with Navy Medicine Readiness and Training Command (NMRTC), Portsmouth confirmed that the expected interval between a primary care referral and appointment with mental health specialty care currently ranges from four to six weeks. Additionally, many active duty personnel are referred to civilian mental health care providers as a result of limited access to

care. Lengthy wait times for mental health appointments are not unique to the military. When compared to the civilian population, the military has shorter wait times. Dampier (2018) reported that a large analysis on recent U.S. graduates found that civilian mental health appointment wait times averaged in excess of 10 weeks. The use of iCBT bridges this gap, as it demonstrates its efficacy by reducing PHQ-9 scores at the six-week mark of use. As discussed previously, while iCBT has the potential to decrease the need for specialty care (Eriksson et al., 2017), the intent of this project was to ensure that the use of iCBT is a mainstay of treatment at NMRTC Portsmouth and its satellite clinics.

Literature Review

A literature review was conducted in PUBMED, PsycINFO, and CINAHL using the keywords and phrases: cognitive behavioral therapy or CBT; internet, online systems, telemedicine, therapy computer-assisted/therapeutic use, internet-based, computerized therapy, computer therapy, internet-delivered, app, application, mobile app, mobile application, internet-CBT, or iCBT; depression/therapy, depressive disorder/therapy, depression, depressive, dysthymia, dysthymic, depressive disorder, or depressive disorders; primary health care, family practice, family clinic, family medicine, nurse practitioner, outpatient, primary care, or primary health care. Searches were limited to peer-reviewed articles, yielding 196 articles after duplicates were removed. During screening and full-text assessment the following inclusion criteria were applied: published no earlier than 2014, published in English, adult population, research/clinical trial study (expert opinion and review articles excluded), efficacy of iCBT intervention was an outcome reported, iCBT was studied as a stand-alone intervention (i.e., not as one element of a group of concurrent interventions), and a study conducted in a primary care/family practice setting. After applying these criteria, the final critical appraisal included five articles.

The literature reviewed supported iCBT as an effective intervention for improving patients' symptoms of depression. Dahne et al. (2019) found that a behavioral activation mobile application was effective at reducing symptoms of depression and a feasible treatment based on high app utilization and study participant retention. Löbner et al. (2018), Newby, Mewton, & Andrews (2014), and Montero-Marín et al. (2016) all demonstrated a decrease in depressive symptoms in patients using internet-based CBT programs. Romero-Sanchiz et al. (2017) found iCBT to be both effective at reducing patient's symptoms of depression when compared to treatment as usual and demonstrated an overall cost savings associated with iCBT compared to treatment as usual.

Clinical Question

Will primary care providers that treat patients with depressive symptoms but lack integrated behavioral health services, self-report an increase in iCBT use after participating in a multifocal educational (face to face and email) program, as compared to before the intervention?

Focus Areas

After determining that iCBT was an effective and evidence-based intervention to improve depressive symptoms in patients, we further determined that there was a lack of knowledge and utilization of iCBT among providers at NMRTC Portsmouth. For this reason, this project focused on delivering an educational intervention aimed to increase provider's use of iCBT. Other focus areas included goals to increase providers' knowledge about the VA & DoD CPG recommendation for the use of iCBT, increase knowledge about resources for delivering iCBT, increase providers' perception of the benefit of iCBT, and their intent to use this treatment modality in clinical practice.

Relevance to Military Nursing

Depression is a prevalent and pervasive medical condition that indiscriminately affects people. While there are many different risk factors that make an individual more susceptible to depression, one major risk factor is military service (VA & DoD, 2016). The VA and DoD (2016) acknowledged that the inherent nature of military service - separation from family, and combat - makes service members more prone to depression. In fact, military service members are five times more likely to experience depression than their civilian counterparts (VA & DoD, 2016).

Depression also impacts the Defense Health Agency's (DHA) Quadruple Aim performance process pillar of readiness. DoD instruction 6490.07 (2010) provides guidance on deployment limiting conditions, of which depression - depending on its severity - is one. Additionally, DoD instruction 6490.15 (2013) states "It is DoD policy that behavioral health services are provided in primary care settings to decrease overall health costs and to improve patient access to behavioral health care, population health, readiness, physical and mental health outcomes, and patient and provider satisfaction" (p. 1-2). Currently, delivery of behavioral health care within primary care is accomplished in part through the employment of integrated behavioral health consultants (IBHC). IBHCs are a huge asset to family practice clinics, but unfortunately not all primary care clinics in the Military Health System (MHS) have an IBHC within the clinic. Current staffing requirements call for only one internal behavioral health consultant for every 3,000-7,499 enrollees. iCBT gives providers another tool that allows them to deliver behavioral health care in the primary care setting. It decreases wait times, eases the burden on access to care, and is less expensive for all stakeholders (Richards, 2018).

Our project seeks to empower primary care providers with the skills and knowledge necessary to initiate iCBT in the primary care setting. Our project perfectly aligns with DHA's Quadruple Aims by improving care, health, and readiness with a cost-effective solution.

Organizing Framework

The Johns Hopkins Nursing Evidence Based-Practice Model (JHNEBP) was the guiding framework for implementation of the project. This model is a problem-solving approach that has three essential components: inquiry, practice and learning that incorporate nursing standards of practice with evidence-based practice (Dang & Dearholt, 2017). The model considers internal forces (organization culture, staffing) and external forces (legislation, regulations) (Melnyk & Fineout-Overholt, 2015), which optimizes the project for the clinical setting. Finally, the model is implemented in a tri-phasic PET process: Practice question, Evidence, and Translation. These phases have an updated total of 19 steps that outline and guide the evidence-based project (Dang & Dearholt, 2017).

The JHNEBP is the optimal model to implement the Doctor of Nursing Practice (DNP) project. The model provides clear and coherent steps to guide the project and the divided phases simplify the tasks for implementation. (White, Terhaar, & Dudley-Brown, 2016). This model is descriptive and detailed, yet simplified and ideal for novice providers to implement evidence-based practice.

The project was guided by following the phases and steps outlined in the JHNEBP. The outlined steps provided a clear blueprint for implementing the project from start to completion and dissemination.

Project Design

General Approach

We started this project by conducting informal interviews with primary healthcare providers assigned to local MTF clinics to determine whether there was a general knowledge of iCBT or consistent or extensive use of iCBT among these providers. After determining that there was a lack of knowledge and utilization of iCBT among providers, we chose to develop a provider-focused educational intervention with a primary goal of increasing providers' use of iCBT. A meta-review of effective educational interventions for changing primary care providers' practice behaviors (Sohn, Ismail, & Tellez, 2004) of 11 systematic reviews, indicated that effective education interventions to change primary care providers behaviour include group discussion, interactive workshops, educational outreach visits, and reminders. The article also enforces that the context and larger picture should be considered when selecting an educational intervention. We developed an intervention to be delivered using educational outreach visits to selected primary care clinics, also incorporating reminders delivered via email for 3 weeks following the initial intervention. We scheduled the educational outreach during the clinics weekly training time in consideration of the busy schedule in family practice clinics.

In developing the content of our presentation, we collaborated with an IBHC to identify available and appropriate evidence-based resources for iCBT. After identifying many iCBT resources, we conducted strengths, weaknesses, opportunities, and threats (SWOT) analysis to choose a single mobile application to highlight during the educational intervention. The content of the educational intervention was delivered in-person during scheduled grand rounds with an augmenting PowerPoint presentation (see Appendix A) and supplementary printed materials and resources intended to facilitate the use of iCBT in clinical practice (see Appendix B).

A ten-question survey collecting demographic information and with Likert response questions was developed and reviewed by command statisticians (see Appendix C). These

surveys were administered prior to the educational intervention to collect baseline measures and again immediately after the educational intervention. For three weeks after the initial educational intervention providers received weekly emails reinforcing key concepts. A final survey was administered four-weeks after the initial educational intervention.

Setting and Population

This project took place in the mid-Atlantic region in the Family Medicine Clinics at Navy Medicine Readiness and Training Command (NMRTC), located in Portsmouth Virginia. NMRTC is one of the oldest naval hospitals and serves over 180,000 beneficiaries. The Family Medicine clinic is located at NMRTC and there are nine additional branch clinics in the area. Two clinics without IBHCs were selected for the intervention, as the lack of an IBHC clinic increased the need for behavioral health resources. There were a total of eight providers practicing in these two clinics who received the intervention. One of the clinics served active-duty military, retirees, and dependents while the other clinic exclusively served active-duty military service members.

Procedural Steps

Prior to developing the educational intervention, we conducted informal interviews with primary healthcare providers assigned to local MTF clinics to determine whether there was a general knowledge of iCBT or consistent or extensive use of iCBT among these providers. After determining that there was a lack of knowledge and utilization of iCBT among providers, we collaborated with an IBHC to identify available and appropriate evidence-based resources for iCBT. After identifying many iCBT resources, we conducted strengths, weaknesses, opportunities, and threats (SWOT) analysis to choose a single mobile application to highlight during our educational intervention. An educational intervention was developed with a

PowerPoint presentation (see Appendix A) and packets containing DoD/VA resources (see Appendix B) were distributed to providers. A Likert survey was administered and completed with pen and paper (see Appendix C) prior to the educational intervention to collect baseline measures and again immediately after the educational intervention. Three weeks post the initial educational intervention providers received weekly emails reinforcing key concepts (see Appendix D). A final Likert survey was administered and completed with pen and paper four weeks after the initial educational intervention.

HIPAA Concerns and Ethical Considerations

No personally identifying data was collected. Pre/post-intervention surveys and four-week follow-up surveys were matched using non-personally identifying codes chosen by survey respondents. We did not recommend a requirement to incorporate iCBT into the care of all patients seeking treatment for depressive symptoms, rather we provided information and resources for providers so that they could make an informed decision about the use of this modality in the care of individual patients. It is important that providers continue to use clinical judgement when deciding whether iCBT is appropriate in specific situations.

Results

Demographics

The initial sample consisted of eight providers which included two medical doctors, one doctor of osteopathy, three physicians assistants, one nurse practitioner, and one independent duty corpsman. Seventy-five percent of the sample was active-duty military. Four out of eight providers reported less than five years of practice experience. One provider reported between five and ten years of experience, two reported between 10 and 20 years of experience, and one reported between 20 and 30 years of experience. Of the initial sample of eight, seven providers

completed the survey immediately after the intervention and five providers completed the four-week follow-up survey.

Self-Reported Frequency of Use

On the initial pre-intervention survey, 50% of providers reported that they currently never recommended iCBT to patients with mild to moderate depression, 25% reported that they always recommend iCBT, 12.5% reported recommending iCBT 25% of the time and 12.5% reported recommending iCBT 75% of the time.

On the post-intervention survey, 71.4% of providers reported that they currently never recommended iCBT to patients with mild to moderate depression, 14.3% reported recommending iCBT 25% of the time and 14.3% reported recommending iCBT 50% of the time.

On the four-week post-intervention survey 20% of providers reported that they currently never recommended iCBT to patients with mild to moderate depression, 20% reported that they always recommend iCBT, 20% reported recommending iCBT 25% of the time and 40% reported recommending iCBT 75% of the time.

Provider Knowledge

On the pre-intervention survey, 87.5% of providers reported that they were knowledgeable about the recommendation for iCBT as well as iCBT resources, while 12.5% reported they were not knowledgeable.

On the post-intervention survey, 70% of providers reported that they were knowledgeable about the recommendation for iCBT, 14% were neutral, and 29% reported they were not knowledgeable. In the survey 28% reported they were knowledgeable about iCBT resources, 28% were neutral, and 42% reported they were not knowledgeable.

On the four-week post-intervention survey 100% of providers reported that they were knowledgeable about both the recommendation for iCBT and iCBT resources.

Perception of Benefit

On the pre-intervention survey, 87.5% of providers reported that they believed iCBT to be a beneficial adjunct to other treatments for mild to moderate depressive symptoms and 12.5% disagreed that iCBT was beneficial.

On the post-intervention survey, 57% of providers reported that they believed iCBT to be a beneficial adjunct to other treatments for mild to moderate depressive symptoms and 43% disagreed that iCBT was beneficial.

On the four-week post-intervention survey 100% of providers reported that they believed iCBT to be a beneficial adjunct to other treatments for mild to moderate depressive symptoms.

Perception of Ease

On the pre-intervention survey, 87.5% of providers reported they agreed that iCBT is easy to integrate into clinical practice and 12.5% disagreed.

On the post-intervention survey, 14% of providers reported they agreed that iCBT is easy to integrate into clinical practice, 42% were neutral, and 44% disagreed.

On the four-week post-intervention survey 100% of providers reported they agreed that iCBT is easy to integrate into clinical practice

Intent to Use

On the pre-intervention survey, 87.5% of providers reported they intended to use iCBT in their future clinical practice and 12.5% did not intend to use iCBT.

On the post-intervention survey, 57% of providers reported they intended to use iCBT in their future clinical practice, 14% were neutral, and 29% did not intend to use iCBT.

On the four-week post-intervention survey 100% of providers reported they intended to use iCBT in their future clinical practice.

For graphic representations of data, see Appendix E.

Analysis

The four-week post-intervention survey revealed an increase in providers' self-reported frequency of use of iCBT, knowledge about the DoD/VA CPG recommendation for the use of iCBT, knowledge about resources for delivering iCBT, perception of the benefit of iCBT, and intent to use this treatment modality in clinical practice. However, a small sample size and 38% attrition are factors that limit the ability to draw strong conclusions from the data collected.

Compared to the results of the survey administered to the providers before the intervention, all measures decreased after the intervention and then subsequently increased on the four-week follow-up survey. Although this was unexpected, there are several possible explanations. Although the survey clearly stated that the subject was internet-delivered cognitive behavioral therapy and this was stated during distribution of the surveys, it is possible that there was confusion or misinterpretation about what was being measured on the initial survey. This may have caused an increase in the pre-intervention measures and a decrease following training and clarification. Differences between how survey concepts are intended to be communicated and respondents' understanding of what is being asked are not uncommon, even when concepts are clearly worded (Schober, Suessbrick, & Conrad, 2018). We suspect this contributed to the results in our survey based on observations made during the initial interviews conducted prior to the development of the intervention. When providers were asked if they used internet-delivered cognitive behavioral therapy in clinical practice many reported that they did so frequently. However, upon further questioning it was clarified that they frequently recommended a referral

to a mental health professional for cognitive behavioral therapy as opposed to recommending iCBT.

It is possible that immediately following the educational intervention, providers did not feel they had all of the information they needed to justify a change in clinical practice. In the four weeks following the educational intervention, providers had the time and opportunity to review the written resources and materials provided during the intervention. The weekly follow-up emails also included information that supported the initial training including a web link and the exact location of the recommendation for iCBT within the DoD/VA CPG. It is possible that providers were initially hesitant but after having time to review this information they experienced an increase in knowledge and perception of benefit leading to an increase in use and intent to use iCBT in clinical practice.

Providers showed a significant decrease in perception of the ease of integrating iCBT into clinical practice immediately after the intervention. Like with other measures, on the four-week follow-up survey, they reported significant increase in this measure. This could be explained by the providers having time to test and use the resources provided and becoming more comfortable with them.

Finally, three of the eight providers were lost to follow-up. Most of the four-week surveys were delivered in person, however one provider transferred during this time and this survey was delivered by email and not returned. The lack of in-person delivery may explain why this provider was lost to follow-up. However, it is also possible that those who did not complete follow-up surveys chose not to do so because they did not find the training or resources useful.

Organizational Impact / Implications to Practice & Policy

iCBT is an evidence-based treatment that is easy to implement in the primary care setting and is currently underutilized. iCBT is a resource that adheres to the CPG for the Management of Major Depressive Disorder and is a tool for providers to address depression in patients who decline or are unwilling to pursue face to face mental health care or use it as a bridge to specialty care.

Organization-wide implementation has the ability to lead to an improvement in readiness and deployability within the command, as evidenced by a reduction in self-reported depressive symptoms -- PHQ-9 scores measured at the six-week mark of iCBT use. Additionally, iCBT use may lead to faster symptom resolution and decrease the burden on mental health specialty clinics by allowing primary care providers to initiate psychotherapy treatment. This early initiation can alleviate the access to care burden in the specialty clinics and limit out of network referrals to civilian care; therefore, allowing NMRTC Portsmouth to recapture patients that were previously lost to the network, subsequently leading to a decrease in the cost of care.

Provider training demonstrated an improvement in all primary and secondary focus aims and speaks to the feasibility and efficacy of implementation. Additionally, all resources used are free and supported by the VA/DoD. Based on the results, we recommended provider training and adoption of evidence-based intervention in all primary care clinics lacking an IBHC.

Future Directions for Research and Practice

A future project designed to improve the generalizability limitation experienced during this project may provide greater confidence in the efficacy of an educational intervention to increase primary care providers' use of iCBT. Expanding the intervention to include all NMRTC Portsmouth clinics would provide a larger sample population and increase generalizability. For the clinics with IBHCs aboard, the IBHCs may be well-positioned to provide continuing training

and support for providers so that progress is sustained. While our results relied upon providers' self-reported measures, more objective measurement of outcomes would be beneficial. Finally, while our project was provider focused, moving forward it would also be important to assess patients' use and perception of iCBT after it is recommended by their provider.

Conclusion

Depression remains a common and pervasive illness that significantly impacts the civilian and military population alike. iCBT is an efficacious first-line treatment option for depression that is recommended by the VA/DoD; however, it is underutilized in the primary care setting. Educating primary care providers on iCBT use and providing them with resources is the first step in increasing its use in this setting.

Our multifaceted educational intervention with three weekly follow-up emails resulted in an improvement in all outcome measures of interest between the pre-intervention survey and the four-week post-intervention survey. The training was succinct and delivered during a routinely scheduled training meeting, so it did not diminish access to care or remove providers from the clinical setting. Additionally, the printed resources provided during the training were free and can be ordered online. In conclusion, 80% of providers reported they were using iCBT in their clinical practice, and 100% reported that they intend to use iCBT in their future clinical practice. These results demonstrate the efficacy of the educational intervention and the practicality of implementing the use of iCBT in Primary Care as a treatment modality for patients with depressive symptoms.

References

American Psychiatric Association. (2019). *What is Depression?* Retrieved from: https://www.psychiatry.org/patients-families/depression/what-is-depression

Dahne, J., Lejuez, C. W., Diaz, V. A., Player, M. S., Kustanowitz, J., Felton, J. W., & Carpenter, M. J. (2019). Pilot randomized trial of a self-help behavioral activation mobile app for utilization in primary care. *Behavior therapy, 50*(4), 817-827. doi:10.1016/j.beth.2018.12.003

Dampier, C. (2018). Mental health care appointments often come with a long wait. 3 ways to cope while help is delayed. Retrieved from https://www.chicagotribune.com/lifestyles/sc-fam-mental-health-wait-times-1030-story.html

Dang, D., & Dearholt, S. L. (2017). *Johns Hopkins nursing evidence-based practice third edition: Model and guidelines*. Indianapolis: Sigma Theta Tau International.

Department of Defense. (2010, February 5). *Deployment-limiting medical conditions for service members and DoD civilian employees* (DoD Instruction 6490.07). Retrieved from https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/649007p.pdf

Department of Defense. (2014, November 20). *Integration of behavioral health personnel (BHP) services into patient-centered medical home (PCMH) primary care and other primary care service settings* (DoD Instruction 6490.15). Retrieved from https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/649015p.pdf

Department of Veterans Affairs & Department of Defense. (2016, April). *VA/DoD clinical practice guideline for the management of major depressive disorder*. Retrieved from https://www.healthquality.va.gov/guidelines/MH/mdd/VADoDMDDCPGFINAL82916.pdf

Dieleman, J.L., Baral, R., & Birger, M. (2016). U.S. Spending on personal health care and public health, 1996–2013. *JAMA*. doi:10.1001/jama.2016.16885

Eriksson, M., Kivi, M., Petersson, E., Ariai, N., Agren, H., Spak, F., ... Bjorkelund, C. (2017). Long-term effects of internet-delivered cognitive behavioral therapy for depression in primary care - the PRIM-NET controlled trial. *Scandinavian journal of Primary Health Care*, *35*(2), 126-136. http://dx.doi.org/10.1080/02813432.2017.1333299.

Gautam, S., Jain, A., Gautam, M., Vahia, V. N., & Grover, S. (2017). Clinical practice guidelines for the management of depression. *Indian Journal of Psychiatry*, *59*(Suppl 1), S34–S50. doi:10.4103/0019-5545.196973

Health Quality Ontario (2019). Internet-delivered cognitive behavioural therapy for major depression and anxiety disorders: A health technology assessment. *Ontario health technology assessment series*, *19*(6), 1–199. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6394534/

Kladnitski, N., Smith, J., Allen, A., Andrews, G., & Newby, J. M. (2018). Online mindfulness-enhanced cognitive behavioural therapy for anxiety and depression: Outcomes of a pilot trial. *Internet Interventions, 13,* 41-50. doi: 10.1016/j.invent.2018.06.003.

Lamb, T., Pachana, N.A., & Dissanayaka, N. (2018). Update of recent literature on remotely delivered psychotherapy interventions for anxiety and depression. *Telemedicine and e-Health.* Advance online publication. doi: 10.1089/tmj.2018.0079.

Löbner, M., Pabst, A., Stein, J., Dorow, M., Matschinger, H., Luppa, M., . . . Riedel-Heller, S. G. (2018). Computerized cognitive behavior therapy for patients with mild to moderately severe depression in primary care: A pragmatic cluster randomized controlled trial (@ktiv). *Journal of Affective Disorders, 238,* 317-326. doi:10.1016/j.jad.2018.06.008

Lyness, J. M. (2020). Unipolar minor depression in adults: Epidemiology, clinical presentation and diagnosis. In D. Solomon (Ed.), *UpToDate.* Retrieved from https://www.uptodate.com/contents/unipolar-minor-depression-in-adults-epidemiology-clinical-presentation-and-diagnosis?sectionName=COURSE%20OF%20ILLNESS&search=mild%20depression%20treatment&topicRef=14693&anchor=H796041999&source=see_link#H796041999

Malhi, G., & Mann, J. (2018). Depression. *Lancet, 392*(10161), 2299-2312. doi:10.1016/S0140-6736(18)31948-2

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing & healthcare: a guide to best practice* (Third ed.). Philadelphia: Wolters Kluwer Health.

Montero-Marín, J., Araya, R., Pérez-Yus, M. C., Mayoral, F., Gili, M., Botella, C., . . . García-Campayo, J. (2016). An internet-based intervention for depression in primary care in spain: A randomized controlled trial. *Journal of Medical Internet Research, 18*(8), e231. doi:10.2196/jmir.5695

Newby, J., Mewton, L., & Andrews, G. (2016). Transdiagnostic versus disorder-specific internet-delivered cognitive behavior therapy for anxiety and depression in primary care. *Journal of Anxiety Disorders*, *46*, 25-34. http://dx.doi.org/10.1016/j.janxdis.2016.06.002

Nock, M. K., Petukhova, M., Santiago, P. N., Wu, B., Zaslavsky, A. M., & Kessler, R. C. (2012). Prevalence of DSM-IV major depression among U.S. military personnel: meta-analysis and simulation. *Military medicine, 177*(8 Suppl), 47–59. https://doi.org/10.7205/milmed-d-12-00103

Richards, D. (2018). Tackling the mental health epidemic with telehealth. Retrieved from https://www.healthitoutcomes.com/doc/tackling-the-mental-health-epidemic-with-telehealth-0001

Romero-Sanchiz, P., Nogueira-Arjona, R., García-Ruiz, A., Luciano, J. V., García Campayo, J., Gili, M., . . . Mayoral Cleríes, F. (2017). Economic evaluation of a guided and unguided internet-based CBT intervention for major depression: Results from a multi-center, three-armed randomized controlled trial conducted in primary care. *PloS one, 12*(2), e0172741. doi:10.1371/journal.pone.0172741

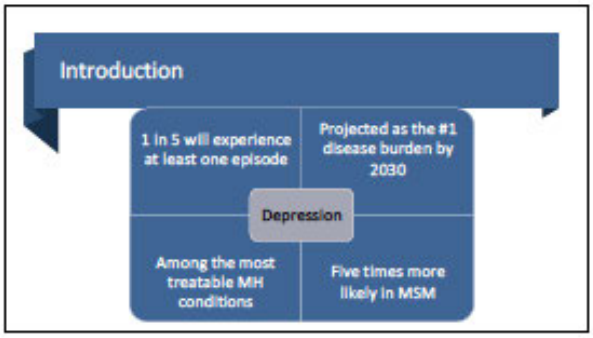
Schober, M. F., Suessbrick, A. L., & Conrad, F. G. (2018). When do misunderstandings matter? evidence from survey interviews about smoking. *Topics in Cognitive Science, 10*(2), 452-484. doi:10.1111/tops.12330

White, K. M., Terhaar, M. F., & Dudley-Brown, S. (2016). Translation of evidence into nursing and health care (2nd ed.). NY: Springer Publishing Company.

Sohn, W., Ismail, A., & Tellez, M. (2004). Efficacy of educational interventions targeting primary care providers' practice behaviors: an overview of published systematic reviews. *Journal of public health dentistry, 64*(3), 164-72.

Appendix A
PowerPoint Presentation for Educational Intervention

1



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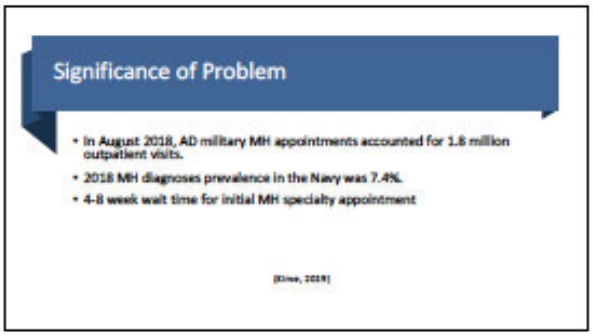

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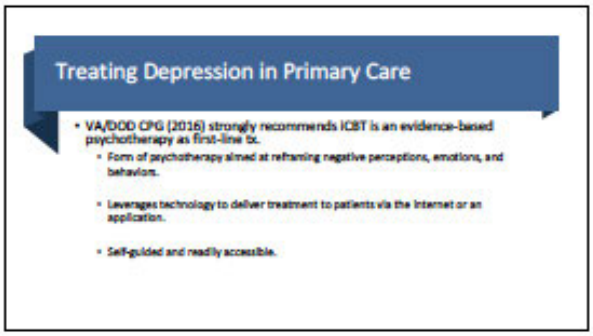

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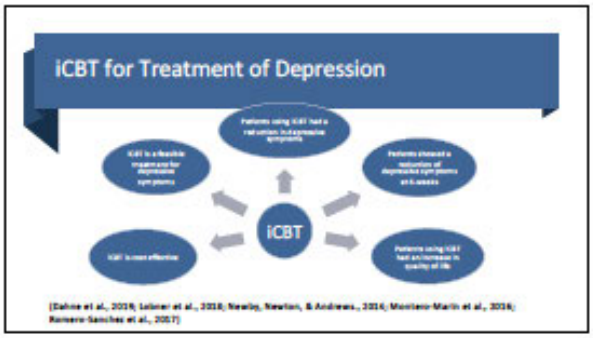

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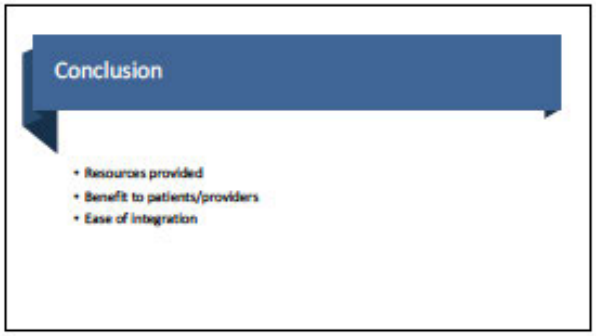
Appendix A (continued)
PowerPoint Presentation for Educational Intervention

7

8



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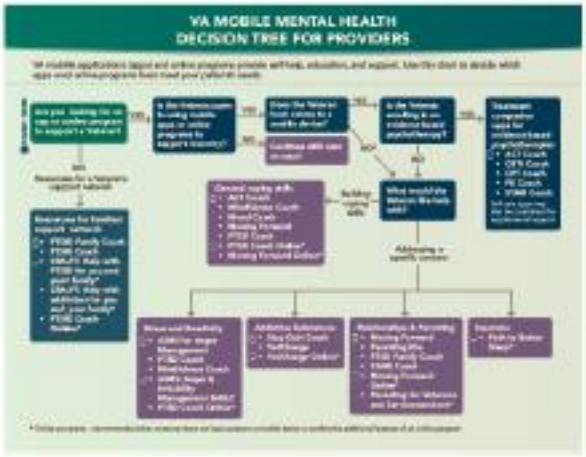
Appendix B
Printed Materials for Educational Intervention



Appendix C
Survey for Data Collection

Internet-delivered CBT: Provider knowledge, skills, and attitudes (KSA)

Day of birth: __ __
Color of first car: _____
Favorite candy: _____
(Unique identifier to correlate surveys for data purposes only)

Demographics	Please circle answers				
Military status	Active Duty	Reserve	Civilian	N/A	
Provider type	MD	DO	PA	NP	Other:
Years in practice	0-5	5-10	10-20	20-30	>30

iCBT	*Never*	*25% of the time*	*50% of the time*	*75% of the time*	*Always*
I currently recommend internet-delivered cognitive behavioral therapy (iCBT) for patients with mild to moderate depression	○	○	○	○	○
	Strongly Disagree	*Somewhat Disagree*	*Neutral*	*Somewhat Agree*	*Strongly Agree*
I am knowledgeable about the recommendations for iCBT	○	○	○	○	○
I am knowledgeable about the patient resources for iCBT	○	○	○	○	○
iCBT is a beneficial adjunct to other treatments for mild to moderate depressive symptoms	○	○	○	○	○
iCBT is easy to integrate into clinical practice	○	○	○	○	○
I intend to recommend iCBT in my future clinical practice	○	○	○	○	○

What barriers were there to using iCBT in your practice? Additional comments?

_____
_____
_____
_____
_____
_____
_____

Disclaimer: Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate in this survey, all personal information will be kept confidential. The results of this survey are scholarly purposes only.

Appendix D
Weekly Emails for Educational Intervention

Email Post-Training Week 1

Thank you for attending our presentation on internet-delivered cognitive behavioral therapy for mild to moderate depression in primary care. Thanks for your time, your participation is sincerely appreciated!

Fact of the Week: Computer-based cognitive behavioral therapy is recommended in the DoD/VA CPG for the Management of Major depressive Disorder (2016). See recommendation 11 on page 106 of the CPG.
https://www.healthquality.va.gov/guidelines/MH/mdd/VADoDMDDCPGFINAL82916.pdf

Email Post-Training Week 2

Thank you for attending our presentation on internet-delivered cognitive behavioral therapy for mild to moderate depression in primary care. Thanks for your time, your participation is sincerely appreciated!

Fact of the Week: The Department of Veterans Affairs offers STAIR Coach and many more free mental health applications for patients. Information about these apps can be found on the VA App Store website
https://mobile.va.gov/appstore/mental-health

Email Post-Training Week 3

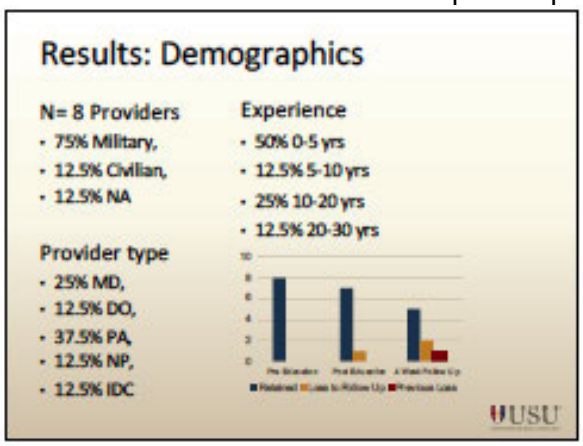
Thank you for attending our presentation on internet-delivered cognitive behavioral therapy for mild to moderate depression in primary care. Thanks for your time, your participation is sincerely appreciated!

Fact of the Week: The VA offers many mental health resources for providers, including the ability to order free printed materials like the App Prescription Pad and Decision Tree provided during the iCBT training. See the links below.

https://www.myvaapps.com/user-guides
https://orders.gpo.gov/PTSD.aspx

***Based on feedback and provider request during one of our trainings, we are also including a link to the Sesame Street Toolkits, which can be accessed online and address a variety of medical and mental health topics for pediatric patients. If you scroll through the toolkits offered, you will even find toolkits specifically for military families and veterans! We appreciate the feedback which allows us to include information that meets your needs in practice!
https://www.sesamestreet.org/toolkits

Appendix E
Graphic Representation of Results



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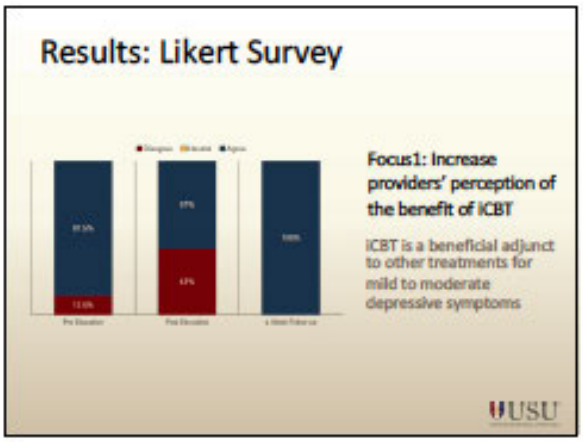

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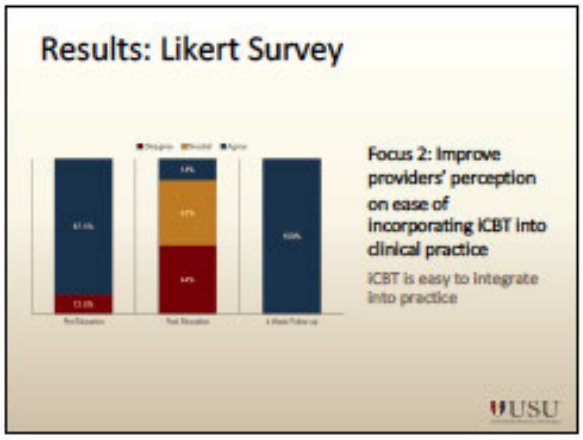

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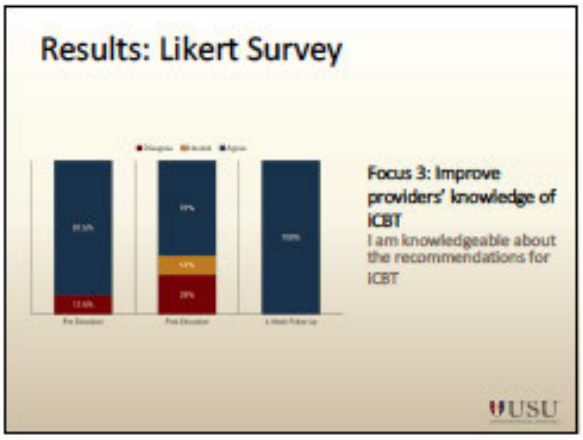

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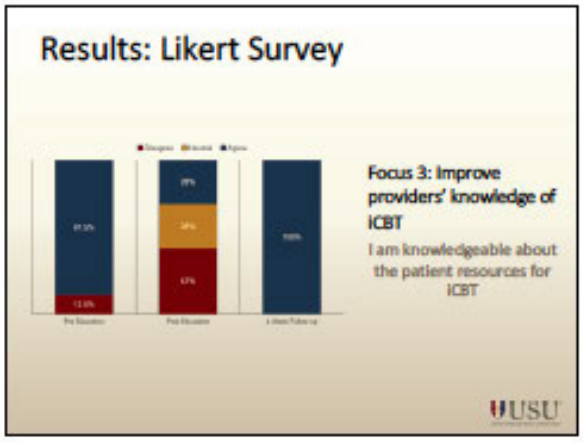

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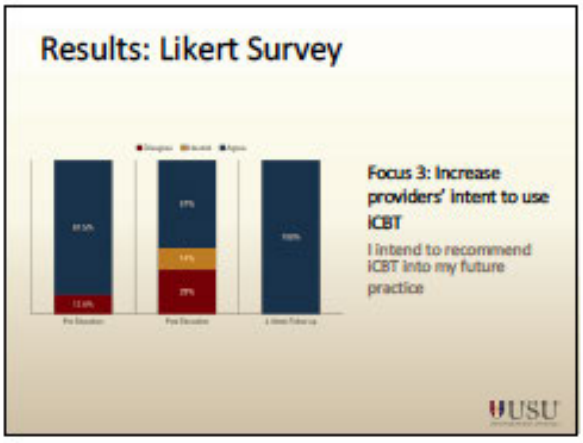

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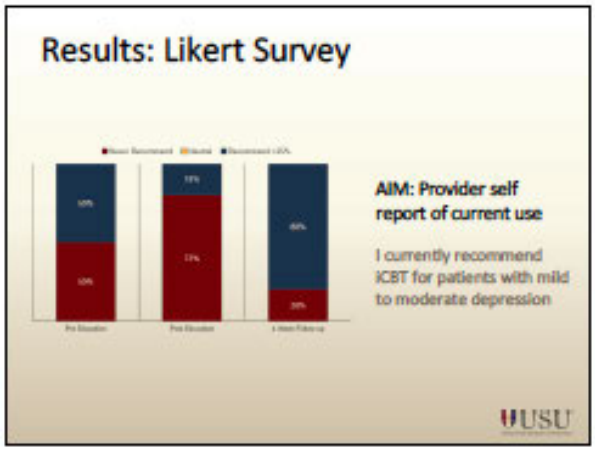
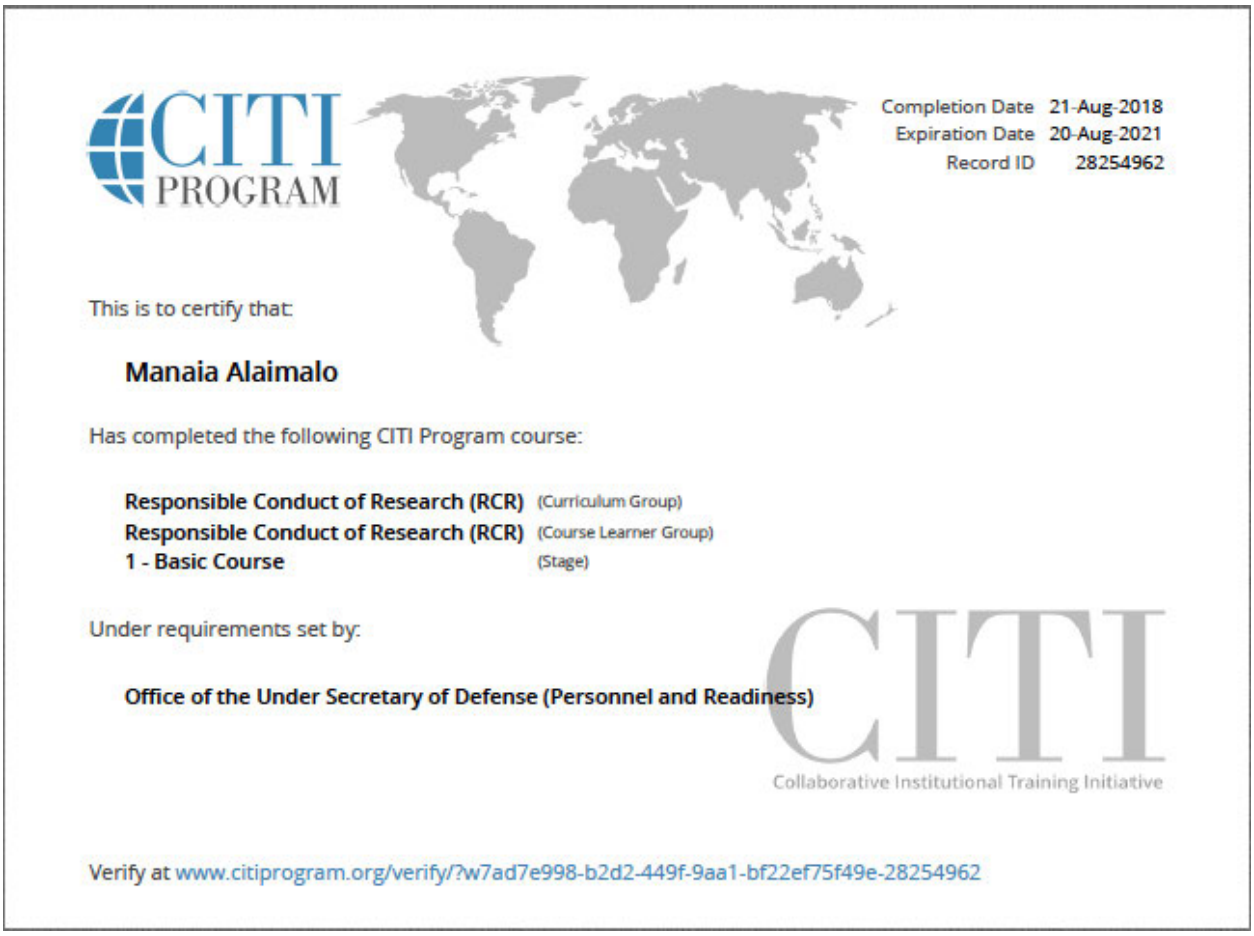
Appendix E (continued)
Graphic Representation of Results



Appendix F
CITI Certificates for All Authors



CITI PROGRAM

Completion Date 21-Aug-2018
Expiration Date 20-Aug-2021
Record ID 28254962

This is to certify that:

Manaia Alaimalo

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

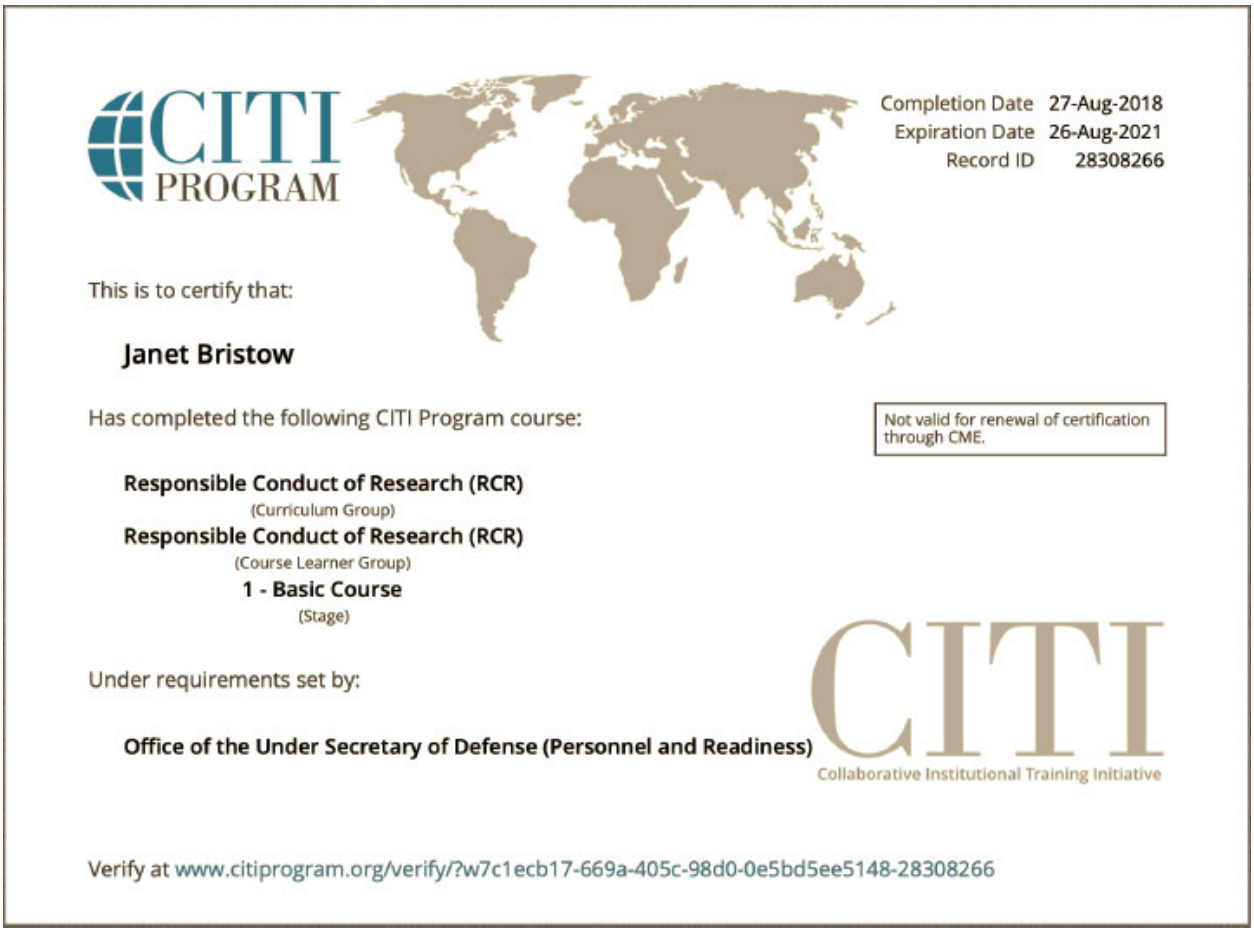
Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w7ad7e998-b2d2-449f-9aa1-bf22ef75f49e-28254962

Appendix F (continued)
CITI Certificates for All Authors



CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28308266

This is to certify that:

Janet Bristow

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - Basic Course
(Stage)

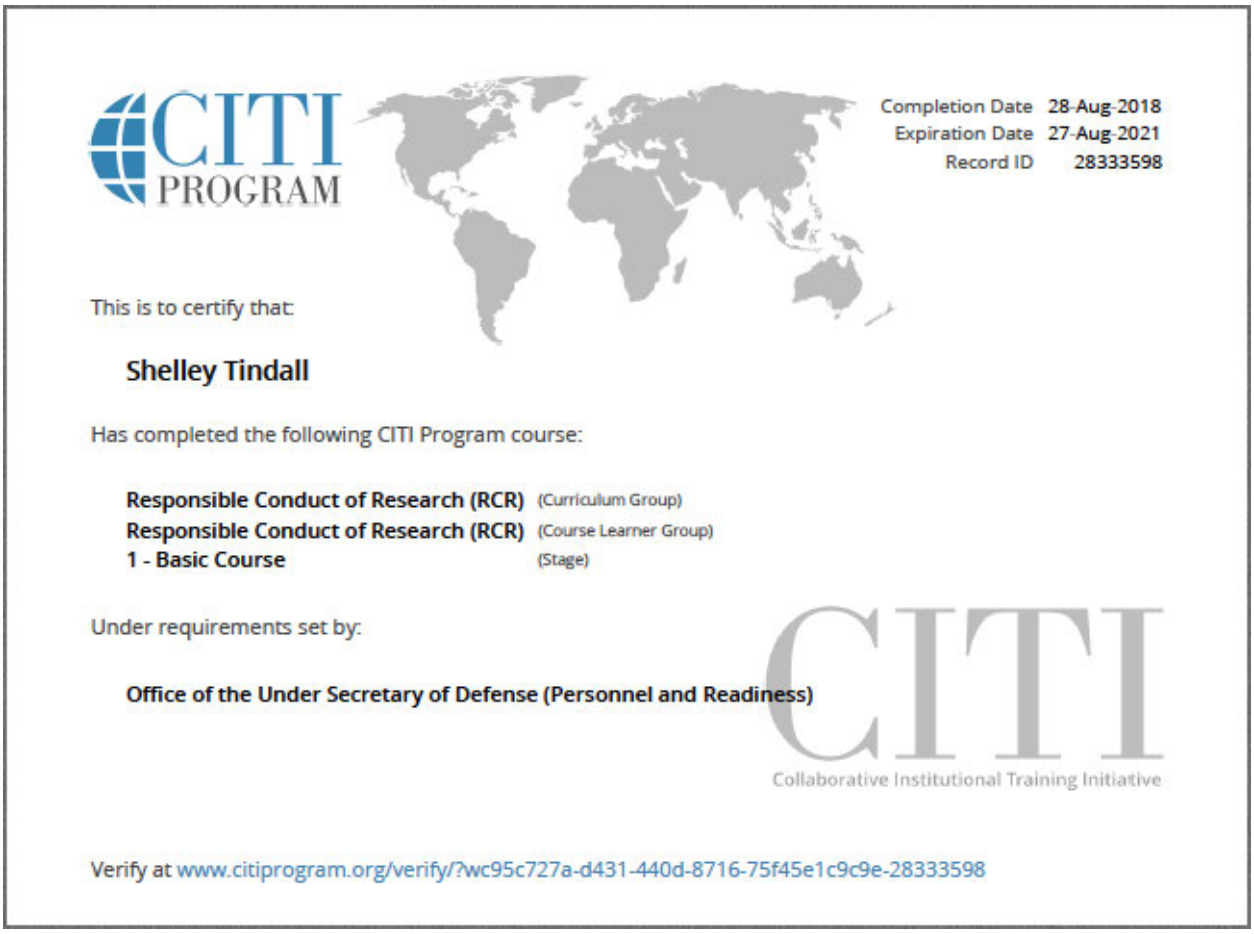
Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w7c1ecb17-669a-405c-98d0-0e5bd5ee5148-28308266

Appendix F (continued)
CITI Certificates for All Authors



CITI PROGRAM

Completion Date 28-Aug-2018
Expiration Date 27-Aug-2021
Record ID 28333598

This is to certify that:

Shelley Tindall

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wc95c727a-d431-440d-8716-75f45e1c9c9e-28333598

Appendix G
USU (VPR) Form 3202N

USU
Uniformed Services University

OFFICE OF RESEARCH
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814
PHONE: (301) 295-3303; FAX (301) 295-6771

NOTICE OF PROJECT APPROVAL

Change Number: Original

VPR Site Number:	GSN-61-11454
Principal Investigator:	Bristow, Janet
Department:	Graduate School of Nursing
Project Type:	Student
Project Title:	Utilization of internet-based Cognitive Behavioral Therapy in Adults wirh Depressive Symptoms: A bridge between primary care and specilaty care at NMCP
Project Period:	8/18/2020 to 4/21/2020

Assurance and Progress Report Information:

Name	Sup	Approval Type	Status	Approved On	Forms Received
Progress Report	0			To be Submitted	N/A

Remarks:
This Notice Of Project Approval has been reviewed and approved. Please remember that you must submit a final Progress Report (Form 3210) upon completion of this project.

Questions regarding this approval should be directed to the following person in the Office of Research:
Sharon McIver, (301) 295-9814.

[redacted]

Toya V. Randolph, Ph.D., MSPH Date
Acting Vice President for Research
Uniformed Services University of the Health Sciences

cc: File
Dr. Kennett Radford
Laura, Taylor

Appendix H
IRB Letter of Determination

Clinical Investigation Department, Naval Medical Center Portsmouth

620 John Paul Jones Circle, Portsmouth, VA 23708 (757) 953-5939 Fax (757) 953-5298, DSN 377-5939

August 12, 2020

From: Deputy, Clinical Investigation Department
To: Meedeessa Morgan, LCDR, NC, USN

SUBJ: LETTER OF WAIVER OF IRB REVIEW FOR QUALITY IMPROVEMENT PROJECT

1. Your project titled NMCP.2020.0117: "Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Naval Medical Center Portsmouth" has been evaluated by an Exemption Determination Official (EDO). Per Defense Health Agency policy, the EDO determined that your project is not human subject research and does not require IRB review.

2. Projects that do not require IRB approval are not eligible for Clinical Investigation Department travel funds.

3. You will still need to obtain publication approval for the project which is required for all works presented or published outside of your command.

4. I remain available and may be reached at [redacted]

[redacted]

K. N. WHEELER

"FIRST AND FINEST IN RESEARCH SUPPORT"

Appendix I
NMRTC Portsmouth PAO Clearance

IV. THIS SECTION IS TO BE COMPLETED BY THE AUTHOR:

Name (Last, First, MI):		**Corps:**	**Service:**
Alaimalo, Manaia		NC	USN
Rank:	**Position:**	**E-mail:**	
LT	Other	meedeessa.o.morgan.mil@mail.mil	
Phone:	**Pager:**	**Publication type:**	
757-953-7997; 469-269-8560	N/A	**other, explain in comments**	
Department:	**Dept. Head (name and rank):**	**Deadline for NMCP approval (Allow 10 business days):**	
Nursing Research	CDR Meedeessa Morgan		
Directorate:	**Director (name and rank):**	**Deadline for BUMED approval (Allow additional 35 business days):**	
DPE	CAPT Lisa Braun		
Submission title: Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Navy Medicine Readiness and Training Command, Portsmouth			
OCONUS presentations may require higher level approval. Is conference OCONUS? Yes ☐ No ☒			
Via this request, three conferences or journal articles for this manuscript/abstract/presentation may be approved in the same calendar year. Complete the section below, with today's submission as your first or only conference/journal.			
Conference/Journal/Other 1: USU Theses, Dissertations, and DNP Projects			**Date:** 13MAY21
Conference/Journal/Other 2: USU Research Days			**Date:** 13MAY21
Conference/Journal/Other 3: https://digitalcollections.lrc.usuhs.edu/digital/collection/p16005coll10			**Date:** 13MAY21
Previous approval? No			

ANSWER THE FOLLOWING QUESTIONS:	Yes	No
Is it possible that members of the media or the public will be in attendance?	☒	☐
Does your submission include the required identification (name, rank, corps, and command)?	☒	☐
Does it include the required disclaimer?	☒	☐
Does it contain the required copyright statement?	☒	☐
Have you completed the required research integrity training? (attach certificate with authored work)	☒	☐

IF YOUR TOPIC IS HUMAN RESEARCH RELATED COMPLETE THE FOLLOWING:

Appendix I (continued)
NMRTC Portsmouth PAO Clearance

Does the study have IRB Approval?	☐	☐
PI name:		
Study title: Click here to enter text.		
If approved by another institution, name of institution:		
The protocol number is:		
Have you attached the most recent IRB approval letter or continuing review?	☐	☐
Does it contain the required CIP (IRB approval) statement?	☐	☐

IF YOUR TOPIC IS ANIMAL RESEARCH RELATED COMPLETE THE FOLLOWING:		
Does the study have IACUC approval?	☐	☐
PI name:		
Study title: Click here to enter text.		
If approved by another institution, name of institution:		
The protocol number is:		
Have you attached the most recent IACUC approval letter or continuing review?	☐	☐
Does it include the required CIP (IACUC approval) statement?	☐	☐
Does it include the required animal welfare statement?	☐	☐
If applicable, does it include the required animal tissue use statement?	☐	☐
If hemorrhage or trauma related, does the methods section mention that the animal was anesthetized?	☐	☐
Is this a Combat Trauma Research Group protocol?	☐	☐

Additional Information
Other DoD agency or command to which this material has been submitted for approval. None
Submission Date:
Optional Comments: Requesting approval for manuscript, PowerPoint, and Poster presentation. Research Integrity training certificates for all authors can be found in Appendix F of the manuscript.

Appendix I (continued)
NMRTC Portsmouth PAO Clearance

V. TO BE COMPLETED BY PUBLICATION OFFICER:

Department Head Recommendation:	**Director Recommendation:**
☐ Approve ☐ Approve with comment ☐ Return to author for revision, discussion ☐ Disapprove ☒ Forward for higher level review Comments: Comments forwarded to review team Name/Signature: CAPT Craig Cunningham Date: 4/14/2021	☐ Approve ☐ Approve with comment ☐ Return to author for revision, discussion ☐ Disapprove ☒ Forward for higher level review Comments: Name/Signature: CAPT Rhett Barrett Date: 4/12/2021

Public Affairs Recommendation:	**CID Recommendation:**
☐ Approve ☐ Approve with comment ☐ Return to author for revision, discussion ☐ Disapprove ☒ Forward for higher level review Comments: Name/Signature: PO2 Dylan Kinee Date: 4/12/2021	☐ Approve ☐ Approve with comment ☐ Return to author for revision, discussion ☐ Disapprove ☒ Forward for higher level review Comments: Name/Signature: June Brockman Date: 4/12/2021

Attending Veterinarian Recommendation: ☒ N/A	**OPSEC Security Recommendation:**
☐ Approve ☐ Approve with comment ☐ Return to author for revision, discussion ☐ Disapprove ☐ Forward for higher level review Comments: Name/Signature: Date:	☒ Approve ☐Approve with comment ☐Return to author for revision, discussion ☐Disapprove ☐Forward for higher level review Comments: Name/Signature: Hannah Hilts Date: 4/12/2021

NME Recommendation: ☐ N/A	**BUMED Recommendation:**	**Command Action:**
☒ Approve ☐Approve w/ comment ☐Return to author for revision ☐Disapprove ☐Forward to BUMED Comments: No OPSEC concerns noted at this time, considered final version.This pertains to the material in this tasker only	☒ Approve ☐Approve w/ comment ☐Return to author for revision ☐Disapprove ☐Not required Comments: Name/Signature: Andre Sobocinski Date: 5/7/2021	☒ Approve ☐Approve w/ comment ☐Return to author for revision ☐Disapprove ☐Forward for higher level review Comments: Name/Signature: June Brockman By Direction Date: 5/7/2021

Appendix I (continued)
NMRTC Portsmouth PAO Clearance

Name/Signature: Amy Readon Date: 5/3/2021		

Author Notification Date: 5/7/2021 By: DJO

Appendix J
BUMED Approval

REQUEST FOR CLEARANCE FOR AUTHORIZED WORK

A. AUTHOR

1. Name *(Last, First, MI)*	2. Grade / Rank	3. Title
Alaimalo, Manaia, F	LT/O-3	DNP, FNP Student

4. Command / Workplace	5. E-Mail Address	6. Telephone Number *(Include Area Code)*
NMRTC Portsmouth, VA	manaia.f.alaimalo.mil@mail.mil	(562) 310-8577

B. AUTHORED WORK

1. Authored Work Title
Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Navy Medicine Readiness and Training Command, Portsmouth

2. Relevance of authored work to operational medicine / Navy Medicine
The VA/DoD Clinical Practice Guideline (CPG) for the Management of Major Depressive Disorder, strongly recommend internet-delivered cognitive behavioral therapy (iCBT) as an adjunctive treatment when standard psychotherapy is not readily available, furthermore, the CPG emphasizes iCBT's efficacy in significantly reducing severity of depression in patients when compared to waitlisting or treatment as usual. Additionally, iCBT is an exceptional resource for patients declining a mental health referral for reasons such as paucity of time, cost, negative stigma, and counseling mistrust.

3. Summary of media sensitive subject mater
N/A

4. Format

a. Select type of Authored Work Presentation

b. Presentation Date (DD MMM YYYY)
4 May 2021

c. Venue/Location
Uniformed Services University in Bethesda, MD via virtual epresentation

d. Audience
USU faculty and students

f. Will media be attending the presentation? ☐ YES ☒ NO

5. Synopsis (In layman's terms)

a. Background
Depression is a serious medical issue that negatively impacts military members. CBT is an evidence-based treatment for depression that is typically delivered by a mental health specialist; however, there is often a delay in specialty care due to access to care challenges. iCBT is an effective intervention that can be initiated in the primary care setting to improve depressive symptoms while waiting for specialty care.

b. Results
The initial sample included eight providers, with 62% retention at the time of the final survey. The results showed an initial decrease in all outcome measures -- provider knowledge of iCBT, perception of benefit of iCBT, perception of ease to implement iCBT, and intent to use iCBT -- between the pre-intervention and initial post-intervention surveys; however, on the four-week follow-up survey there was an increase in all of the aforementioned outcome measures.

c. Conclusions
Eighty percent of providers reported they were using iCBT in clinical practice, and 100% reported they intend to use iCBT in the future, an increase of 30% and 12.5% respectively. These results demonstrate the efficacy of the intervention and the practicality of implementing the use of iCBT in primary care.

d. Sensitive Areas / Media Interest

N/A

C. LOCAL / REGIONAL PUBLIC AFFAIRS OFFICER
I have reviewed this authored work and request a BUMED/PA review and approval

1. Name	2. Grade / Rank	3. Telephone Number *(Include Area Code)*
Dylan M. Kinee	E-5 / MC2	[redacted]

Appendix J (continued)
BUMED Approval

4. E-Mail Address	5. Signature
dylan.m.kinee.mil@mail.mil	KINEE.DYLAN.MICHAEL.1530252511 Digitally signed by KINEE.DYLAN.MICHAEL.1530252511 Date: 2021.05.04 12:52:59 -04'00'

D. BUMED PUBLIC AFFAIRS

1. Approval

- ☒ a. BUMED Public Affairs has approved for submission / presentation — Date 7 May 2021
- ☐ b. BUMED Public Affairs has forwarded for higher review — Date
- ☐ c. BUMED Public Affairs has received from higher review — Date
- ☐ d. BUMED Public Affairs has notified sender — Date

2. BUMED Public Affairs Officer

a. Name	b. Grade / Rank	c. Telephone Number *(Include Area Code)*
Andre' B. Sobocinski	GS-13	[redacted]

d. E-Mail Address	e. Signature
andre.b.sobocinski.civ@mail.mil	SOBOCINSKI.ANDRE.BADEN.1239537959 Digitally signed by SOBOCINSKI.ANDRE.BADEN.1239537959 Date: 2021.05.07 10:00:37 -04'00'

Appendix K
DNP Project Completion Verification Form

Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled:

Utilization of Internet-based Cognitive Behavioral Therapy in Adults with Depressive Symptoms: A bridge between primary care and specialty care at Navy Medicine Readiness and Training Command, Portsmouth

was completed at: NMRTC Portsmouth

by the following student(s):

(type student name)	*(signature)*	*(date)*
Manaia Alaimalo	[redacted]	05Apr21
Janet Bristow		05Apr21
Shelley Gray		05Apr21

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
- Abstract/Impact Statement (*Appendix F*), and
- DNP Project written report.

Verified by:

	(type name)	*(signature)*	*(date)*
Senior Mentor:	Janice Williams	[redacted]	
Team Mentor:			
Team Mentor:			
Phase II Site Director:	MeeDeessa Morgan	[redacted]	

For RNA Students only *- add the following additional signature for final verification of project completion:*

RNA Project Director *(type name)*	*(Signature)*	*(Date)*

Form Version: 26 Aug 2017/30 Mar2020