

EDUCATING MENTAL HEALTH CLINIC PROVIDERS ON THE BENEFITS
OF YOGA FOR OLDER ADULTS

by

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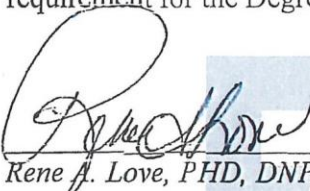
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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by *Kalu Nnate Okorie*, titled *Educating Mental Health Clinic Providers on the Benefits of Yoga for Older Adults* and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.


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I hereby certify that I have read this DNP project prepared under my direction and recommend that it be accepted as fulfilling the DNP project requirement.



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ABSTRACT

Background: Depression is a grave mental health condition in the United States, and 3.4% of the older adult population experiences depression (Centers for Disease Control and Prevention, 2011). Older adults with depression may not engage in mental health treatment because of the cost of co-pay, treatment duration, the stigma of having depression and seeking mental health services and intolerance to medication side effects. Traditional care for treatment of depression, including antidepressant medicines, cognitive behavioral therapy, and supportive treatment, continue to be utilized. However, there is also an increase in the use of naturalistic and more holistic treatment options which include exercise therapies such as yoga (Prathilkanti et al., 2017). Evidence suggests that yoga reduces symptoms of depression (Cahoon, 2012).

Objective: The purpose of this project was to educate mental health providers in an Arizona clinic on the benefits of yoga for older adults with depression.

Setting: A private solo-practitioner psychiatry practice serving adults in the suburban Phoenix, AZ area

Findings: Post yoga education questionnaire was completed by the mental health providers in an Arizona clinic to determine the participants knowledge on yoga as a therapeutic treatment option for older adults with depression. Results revealed positive findings that mental health providers in an Arizona clinic agreed to the facts that yoga would be beneficial as a treatment modality for depressive conditions among older adults.

Discussion: Participants indicated they were open to recommending yoga as an adjunct therapy to older adults with depression and identified additional education on yoga education would be helpful. The ability of the mental health providers to participate in yoga education session

indicates willingness to recommending yoga as a treatment option to older adults with depression. Further study is indicated to identify the efficacy of educating mental health providers on the benefits of yoga for older adults with depression.

INTRODUCTION

Background Knowledge

In the older adult community, depressive disorder is a significant issue that is not a normal part of aging (Rana, & Sharma, 2017). Symptoms of depression in older adults is 15-17% (Cahoon, 2012). Centers for Medicare and Medicaid Services (2015) reported 10.2% of the older adults population in the United States were affected by depression in 2010, increasing to 12.9% in 2015. Depression is a complex issue among the older adults because *polypharmacy* (the simultaneous taking of many medications), is often required to treat both physical and mental health problems. Risk is increased for drug-drug interaction among older adults due to the polypharmacy which sometimes result in adverse events (Slabaugh, Maio, Templin, & Abouzaid, 2012). The dangers associated with polypharmacy may be reduced when the healthcare provider utilizes alternative therapies such as yoga as a treatment alternative or adjunct for the stabilization and treatment of depression. Also, there is an increased risk of unintentional medication discrepancies among the older adults due to unintentional medication changes thereby resulting in greater risk for medication errors (Queleynec et al., 2013). Integration of yoga as a form of treatment for depression might benefit and reduce symptoms of depression while promoting a healthy lifestyle (Cheung & Lee, 2018; Cooney, Dwan, & Mead, 2014). Yoga is an adjunctive therapy that may be used in addition to standard mental health treatments such as psychotherapy and psychopharmacotherapy (Bridges & Sharma, 2017). Yoga, a mind-body practice, has been shown to reduces symptoms of depression (Ramanathan, Bhavanani, & Trakroo, 2017).

Living a lifestyle that improves mental health is instrumental to healthy aging, leading to a better quality of life. Exercise provides an opportunity for improvement of overall mental health (Kvam, Nordhus, & Hovland (2016). Therefore, exercise has the potential to decrease psychiatric symptoms in the older adults with mental health issues (Rosenbaym, Tiedemann, Sherrington, Curtis, & Ward, 2014). Exercise positively impacts the treatment for mild depression and is equivalent to administering psychotherapy and antidepressants for some milder types of depression (Kvam, Nordhus, & Hovland, 2016). Exercise is significant for maintaining physical fitness, promote a better lifestyle and quality sleep and helps to alleviate symptoms of depression (Kvam, Nordhus, & Hovland, 2016).

Yoga, offered as part of the treatment plan, provides a treatment option to lessen the symptoms of the depression and provides the added benefit of a purposeful sense and hope (Prathilkanti et al., 2017). The influence of yoga to reduce symptoms of depression ultimately improves self-esteem in older subjects and might be associated with changes in neurotransmitters (Ramanathan, Bhavanani, & Trakroo, 2017). Specifically, the practice of yoga impacts gamma-aminobutyric-acid coupled with high parasympathetic tone and reduced sympatho-adrenal activity and can lead to an enhanced mood (Ramanathan, Bhavanani, & Trakroo, 2017). Yoga can alleviate psychiatric symptoms by promoting an active lifestyle and an environment that supports healthy living (Meyer et al., 2012).

Local Problem

The older adult population in Arizona continues to grow and thereby, may be contributing to an an increase in depression rates. Arizona Department of Health Services (ADHS: ADHS, 2014) reported in 2010, older adults constituted 14% of the population in

Arizona. United States Census Bureau (USCB: USCB, 2016) reported 16.9% of the population in Arizona represent the older adults indicating an increase of 2.9% from 2010. Currently, the older adult population in Arizona requires medical and psychiatric care and attention because of their chronic and complex mental health conditions (ADHS, 2014). A private solo-psychiatric outpatient clinic, serving adult in a suburban area of Phoenix, Arizona provides psychiatric care services to the older adults that live in that geographic area (ADHS, 2014). Older adult is defined as those adults who are at least 55 years of age or older (Queleynec et al., 2013). The clinic also offers psychiatric care for pediatrics, adolescents, adults as well as older adults. The older adults constitute 40 to 50% of the patients diagnosed with depressive disorder that utilize the clinic for psychiatric care. The clinic has a steady flow of patients and is open Monday through Friday between the hours of 9 am to 8 pm daily and offers outpatient psychotherapy and psychiatric care for patients across the lifespan. The mental health staff and providers at this clinic include: psychiatrist (1), psychiatric nurse practitioner (1), medical assistants (2), scribe (1), for a total of five staff members. The location of the clinic is adjacent to the urban city of Phoenix, AZ. Population in this community is 42,000 (USCB, 2016). The staff at this clinic recognized the benefits of exercise for their patients and were opened to opportunities to learn more about exercises such as yoga which benefit overall mental and physical health.

Problem Statement

A knowledge gap regarding benefits of yoga as an adjunct therapy for older adults with depression. Though pharmacological treatment can be beneficial for the treatment of depression, there are alternatives like exercise in the form of yoga that patients may be more comfortable trying with pharmacological treatment.

Significance

The side effect profile of psychopharmacological agents might place some older adults with depression at risk for greater side effects of adverse effects associated with psychopharmacological treatments. (Meister & Juckel, 2017). Promoting an adjunct therapy such as yoga exercise improves symptoms of a depressive disorder and creates the opportunity for healthy living (Meyer et al., 2012).

Purpose

The purpose of this project was to educate mental health providers in an Arizona clinic on the benefits of yoga for older adults with depression.

Study Question

Will educating mental health providers on the benefits of yoga for older adults with depression increase the mental health providers promotion of yoga when treating their older adults patients who have a diagnosis of depression.

Aims

Aim 1: Educate local mental health staff and providers at this Sun City clinic on the benefits of yoga for older adults with depression. The education will be in the form of a 30-minute educational session offered by a community based certified yoga instructor.

Aim 2: Assess mental health providers and staff perceptions on yoga as a therapeutic treatment option for older adults with depression after they participate in an education session on yoga. A questionnaire will be administered to the mental health clinic staff and providers after receiving an educational session on yoga to assess their readiness to promote yoga as an

intervention for older adults patients in their clinic with a diagnosis of depression after they participate in the education session on yoga.

Aim 3: Assess the number of patients from the local clinic referred for yoga 14 days, and 30 days, post yoga education session.

Objective

The objective of this quality improvement project was to educate the outpatient mental health clinic staff and providers on the therapeutic physical and psychiatric benefits of yoga. As a Doctor of Nursing Practice (DNP) student, I coordinated the education session for the clinic providers and staff and evaluated their response to the educational session. The yoga education session was offered in a face to face presentation and demonstration, conducted by a certified yoga instructor. The specific type of yoga to be offered in this education session was chair yoga. The class was on site at the clinic conference room. It was a one session class that lasted approximately 30-minutes.

THEORETICAL FRAMEWORK AND SYNTHESIS OF EVIDENCE

The charge for today's healthcare practitioners is to safeguard best quality care delivery to all patients. The approach to achieving an improved outcome is to promote and implement an evidence-based intervention (Wuncher, 2014) (Figure 1). The Iowa model of evidence-based practice was utilized in this DNP project to promote quality care with evidence-based application (Doody & Doody, 2013). The model was developed by the recipients of the respected Sigma Theta Tau international Research Utilization Award and has been translated into many languages (Steelman, 2015). The model is used by healthcare institutions to introduce evidence into practice and offer practical guidance to a problem regarding quality improvement in practice. It

has international recognition with several requests to be used from many countries (Steelman, 2015). The model fits the DNP project because it helped in identifying the problem or issue related to the current practice problem, guiding change and improving quality of care and measuring the impact on patients.

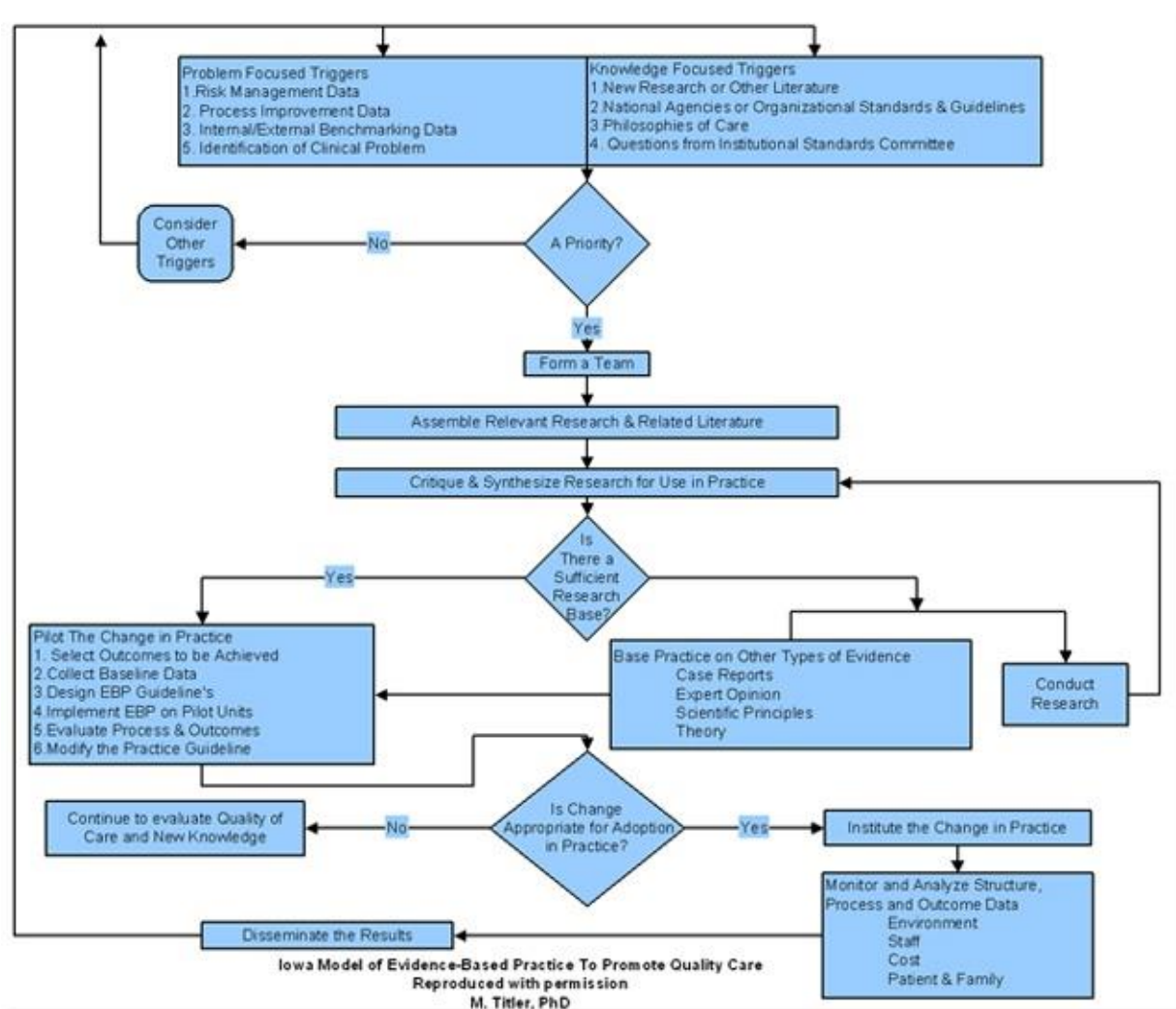


FIGURE 1. Iowa model of evidence-based practice to promote quality care.

The Iowa model guides implementation with the aim to answer clinical questions and predict outcomes. For this particular DNP QI project, it helps to initiate a change and develop the evidence-based intervention of education on the benefits of yoga therapy. The framework is used

by healthcare practitioners internationally, and it is an evidence-based practice model first introduced by Marita Titler in 1994 (Titler et al., 2001). There are eight steps involved in the Iowa model. The first step is selecting a topic that recognizes an opportunity for improvement and identifying an issue that is relevant to the patient's health issue or improves patient outcomes. The second step involves identifying the question or the purpose of the project to improve care. This step questions 'why is a change needed?' The third step is to determine if the issue is a priority, and allows for analysis of the requisites and availability of resources to continue the process. The fourth step involves establishing the team and identification of the key stakeholders. The fifth step is the appraisal and synthesis of evidence. The design and pilot change practice is the sixth step, and the significance of this level is to foster the process and minimize challenges and decrease difficulty. Step seven involves the team integrating the change into practice with the aim of sustainability. The final (eighth) step consists of disseminating and evaluating results. The acquired knowledge is made known to all stakeholders, healthcare providers and staff as deemed appropriate.

Steps of Iowa Model

The integration of the eight steps of the Iowa model in this DNP QI project includes: first identifying the intervention or topic, which is educating mental health clinic providers on the benefits of yoga for older adults. The second step is to identify the purpose of the project, and that is to educate mental health providers in an Arizona clinic on the benefits of yoga for older adults with depression. The third step is to discuss the priority of the issue, determine what is needed and to research the available resources required to complete the process. This step involves first educating the mental health providers on the benefits of yoga for older adults with

depression. The second step involves educating the providers and the staff at the clinic on the positive impacts of yoga which includes both physical, and psychiatric benefits. Since yoga is not currently taught in the practice setting, this project will require hiring a yoga instructor to visit the clinic to educate the mental health clinic providers on yoga. The fourth step will require identifying the critical stakeholders and clinical team members for the project. Critical stakeholders for this quality improvement project include; the psychiatrist, the nurse practitioner, the medical assistants, the scribe, and the yoga instructor. Appraisal and the synthesis of evidence is the fifth step that involves evaluating and analyzing evidence to inform members of the mental health clinic team on the benefits of yoga for older adults. The thorough assessment of resources, time, and cost will ensure the quality improvement project is carried out in a structured manner. The last step of the Iowa Model is the implementation step, where the mental health providers begin to integrate referrals to yoga as part of their clinical plans for their older adults patients with depression.

Synthesis of Evidence

The literature search conducted in CINAHL, PubMed, Google Scholar, and PsycINFO. Keywords/phrases were: “yoga AND education,” “yoga exercise AND depression,” and “older adults AND yoga.” This resulted in a total of 670 relevant articles. Of those, 650 articles were excluded because they did not discuss yoga education session or yoga as a therapeutic intervention for depression. Some 20 articles were assessed fully for eligibility, and then 10 were excluded because the studies did not measure the implementation of yoga and the benefits as an outcome. The remaining 10 articles (Appendix D) were selected on yoga implementation, participants diagnosed with depression, education of mental health providers and the providers’

role in older adults health. The studies focused on the implementation of yoga as an adjunct therapy and the positive impacts of yoga on the older adults to decrease symptoms of depression (Bilderbeck, Farias, Brazil, & Jakobowitz, 2013). Yoga and mindfulness are beneficial treatment options for depression, and mental health providers are in a position to advocate for alternative therapy such as yoga (Butterfield, Schultz, Rasmussen, & Proeve, 2017). Pharmacotherapy and psychotherapy for treatment of depression is associated with limited adherence that resulted in low recovery rates (Prathikanti et al., 2017). The authors encouraged introduction of yoga as an adjunct therapy although there are few rigorous studies suggesting the impact of yoga exercise on depression. Currently, there is on ongoing research about the efficacy and effectiveness of mind-body therapies such as yoga as an adjunct therapy for depression (Bridges & Sharma, 2017). In Asian countries yoga has been recognized and implemented as a therapy for mind-body practice.

Yoga provides a positive impact by reducing symptoms of depression (Meyer et al., 2012). Yoga exercise is a biopsychosocial approach and has recently been extended as part a spiritual component of health and wellness (Crapal, Meyer, & Ames, 2011). Analysis of the 10 combined studies provided an effect size of -3.25 (95% CL, -5.36 to -1.14 P=002) indicating that yoga-based therapy is statistically useful as a complementary intervention for psychological disorders. Combining yoga with traditional psychiatric treatment promotes excellent mental and physical well-being that offers adjunct treatment benefits for mental health conditions (Uebelacker & Broughton, 2016). Feasibility and efficacy of yoga-based intervention in major depressive disorders was evaluated in an outpatient clinic in response to a low adherence rate to an antidepressant (Sharma et al., 2017). The study suggested the possibility and promise of yoga

as an adjunct treatment therapy for major depressive disorder following participants responses to yoga exercise. The participants also indicated that yoga exercise helps to decrease the symptoms of depression. Efficacy of yoga as a complementary therapy depicts that yoga plays a unique adjunct role in the treatment of depression and depressive symptoms (Crapal et al., 2011). The meta-analysis study states yoga has been understudied, with a sound design study required to draw conclusive evidence about the usefulness of yoga specific mental issue in older adults.

Yoga as a practice for a workout has become popular among individuals that want to gain flexibility in physical fitness and strength. It can be performed in the classroom and the privacy of homes. Yoga is a discipline that involves breath control, meditation, and application of body position widely used for health and relaxation that impact life activities and long-term functional well-being (Satish & Lakshmi, 2016). The efficacy of yoga has evidence, and the therapy process involves a commitment to practice and adherence to the regimen associated with lifestyle (Satish & Lakshmi, 2016); the most common types are Hatha, chair, and Raja yoga.

Yoga seems to be beneficial when it comes to the management of depressive disorders and is an attractive option for treating depression because it is nonpharmacological. Yoga interventions in depression have consistently yielded results that are encouraging for treatment of depression through the application of meditation and mind-body practice (Ramanathan, Bhavanani, & Trakroo, 2017). The study provides the efficacy of yoga and evidence of the potential as an adjunct therapy in the management of older adults with depressive disorder. Application of yoga as a complementary therapy for depressive disorder promotes improvement as well as provides positive, healthy thoughts that reduce symptoms of depression. Yoga intervention aiming to improve depression through mind-body practices provide significant

benefits of mood change that ease symptoms of depression (Ramanathan, Bhavanani, & Trakroo, 2017).

Educating the mental health provider and the clinic staff on the benefit of yoga can provide an opportunity for knowledge enhancement about the therapeutic effect of yoga. It will play a significant role for promoting quality care (Butterfield, Schultz, Rasmussen, & Proeve, 2017). In addition, providers learn how to facilitate alternative care options to improve patient outcomes. Another benefit of educating the mental health provider and the clinic staff on the benefit of yoga for older adults is the knowledge it provides can enhance self-care and improve quality of care.

Limitations

In a study conducted by Shohani et al. (2018) the long-term effect of yoga on depressive disorder might not have enough evidence that supports the efficacy and thus creates a gap that suggests a lack of research findings. Lack of literature findings for provider education about yoga and subsequent referral patterns is a limitation. In a study conducted by Chao-Jung et al. (2014) the most vital problem that impacts quality of life is depression and in the analysis using the John-Neyman procedure of yoga, yoga does not reduce symptoms of depression. The application of yoga exercise might not be useful in depression because no proven adjunct therapy is known to reduce symptoms of depression in reasonable safety findings and efficacy. Despite evidence for the possibility of yoga as an adjunct therapy for major depressive disorder, the mechanism by which yoga provides a change in psychiatric condition is unclear (Meister & Juckel, 2017). Therefore, more rigorous research designs needs to be instituted to evaluate higher levels of efficacy. The utilization of yoga as a fitness exercise has excellent benefits as it affects

the body, spirit, and soul; it is more appealing than medicine because it creates an opportunity for active engagement (Pascoe & Bauer, 2015). There are some benefits beyond placebo, but definitive evidence-based studies are still required to establish clearer evidence on both the risks and benefits of yoga (Cramer, Aneyer, Lauche, & Dobos, 2017). Another limitation in the literature review was that many of the studies had small sample sizes, therefore, it is difficult to draw strong treatment conclusions on the benefits of alternative therapies such as yoga as an adjunct treatment therapy (Cramer, Aneyer, Lauche, & Dobos, 2017).

The strengths of the synthesis of evidence include the support for the assumption of yoga as an adjunct therapy as well as the support for educating mental health clinic providers on the benefits of yoga. The other strength of the synthesis of evidence is the consistent promotion of yoga as a complementary therapy which can be recommended by the medical and psychiatric providers (Butterfield, Schultz, Rasmussen, & Proeve, 2017). There were several gaps identified during this synthesis of evidence. There is a lack of research evaluating barriers to yoga as an adjunct treatment for older adults with depressive disorder in an outpatient behavioral setting. There is also lack of evidence that supports effective management of yoga as an adjunct therapy to reduce symptoms of depression. A remarkable gap in the evidence is that only a few studies addressed the effectiveness of yoga in depressive disorder and also lacked evidence or discussion on the mechanism of action of yoga on the stabilization of depressive symptoms. There is a need for further research studies to identify the mechanism of action, strengths, and barriers to offering yoga as adjunct therapy to reduce depressive symptoms. There are identified gaps of evidence for educating the providers on the benefits of yoga including the lack of research

studies for yoga-based therapies as well as evidence on outcomes that supports educating the providers about the benefits of yoga as an adjunct therapy.

METHODOLOGY

Design

The project used a quality improvement design. Before the start of the project; approval was obtained from the University of Arizona institutional review board (Appendix C), and site approval via a local letter of support (Appendix E) was obtained from the Notre Dame Clinic in Sun City, Arizona.

Method

This was a quality improvement project in an outpatient mental health clinic in Arizona. Mental health providers and staff were invited to participate in this quality improvement project. Clinic staff were offered a 30-minute educational session and demonstration on yoga. The educational session was offered by a certified yoga instructor. A four-item questionnaire (Appendix A) was completed by all five project participants at the conclusion of the educational session to determine their perceptions on the value of offering an educational session to clinic staff on the benefits of yoga. There were two points of additional data collection at 15 days and 30 days post the educational session to determine how yoga referrals were initiated by the clinic staff for the older adult patients with depression.

Setting

The setting for the study was a private solo-psychiatric outpatient clinic, serving adults in-suburban Phoenix, Arizona. The City is mostly inhabited by older adults, and the clinic

provides care for individuals with psychiatric issues across their lifespan. The clinic employs one psychiatrist, one nurse practitioner, and three support staff.

Participants

The target population was the clinic staff at the Notre Dame Clinic. The number of participants for this quality improvement project was five (N=5). The clinic has five staff members total and mental health clinicians employed. Five clinic staff including the psychiatrist, nurse practitioner, scribe and two medical assistants attended the education session on yoga. The education session for chair yoga included: (1) chair yoga poses; (2) simple sequences using a chair (ease stress and anxiety); (3) balance stability using the chair as support; (4) learn safety improve strength and flexibility; and, (5) energizing pose for an energy boost to balance focus and stability.

Recruitment of Participants

The QI project investigator invited all clinic staff members to participate in the yoga education session. They were verbally informed of the proposed project. Participants were invited to share in refreshments (coffee & bagels) during the education session as an incentive for their participation. The education session offered to the mental health clinic staff lasted approximately 30 minutes. A community-based certified yoga instructor was recruited from a health and fitness center. The yoga instructor has been through yoga teacher training experience and has over 10 years experience in doing chair yoga with the older adults. The yoga instructor understands the American Council on Exercise (ACE) safety guidelines and how it relates to yoga.

Intervention

A yoga instructor was identified and recruited, to offer an education session on yoga for a period of 30 minutes, and both information on yoga and yoga demonstration was provided to clinic staff free and on-site at the clinic conference room. The yoga instructor was compensated in the form of a gift card. Inclusion criteria: all participants were employed by the Notre Dame Clinic, and participants were 18 years of age or older. Some 20 minutes was spent discussing yoga, benefits of yoga, and a description of chair yoga, then 10 minutes was allowed for a demonstration of some chair yoga poses. The education session was then followed by a brief questionnaire (Appendix A) completed by all participants who participated in the education session.

Approval Letter

The Notre Dame Medical Director provided a written approval for the quality improvement project to be conducted at the local clinic in Arizona (Appendix E). The letter of support offered by the local clinic director was submitted with the UAIRB application.

University of Arizona Institutional Review Board Approval

Approval was received from the University of Arizona Institutional Review Board (Appendix C).

Data Collection

An education session on yoga was provided to a total of five (N=5) staff members of the Notre Dame Clinic. Upon completion of the education session, each participant completed a brief questionnaire (Appendix A) that consisted of demographic items (age, gender, the position at the clinic) and three “Yes/No” questions assessing their thoughts on yoga as a therapeutic

treatment option for older adults with depression. The questionnaire consisted of four (4) questions: (i) Is yoga helpful as a treatment modality for depressive conditions among older adults? (ii) Was the yoga education session beneficial to you in your future practice here at Notre Dame? (iii) Are you open to recommending yoga as an adjunct therapy for older adults with depression? (iv) What else do you need to feel confident in recommending yoga to older adults with depression? (Appendix F).

A second point of data collection was a follow up with Notre Dame staff members and providers to determine how many patients were referred to yoga after the education session on yoga. A tally sheet called “Yoga Referral Log’ was created in MS word to track the number of referrals by the clinic staff and provider (Appendix B). The tally sheet table was created using the MS word software program, and it contained three columns (age, diagnosis, & referred to yoga) to capture the number of patients who had been referred to yoga after the education session was offered to the clinic staff.

The tallies on the number of patient referrals to yoga were tabulated 15 days after the education and second time 30 days after yoga education. All private patient information was omitted from this tally sheet. This tally helped determine if yoga was recommended by the staff and medical providers post the education session at the Notre Dame Clinic.

RESULTS

Data Analysis

The data analysis for the project provides a descriptive analysis of the responses from the short four-item post yoga education questionnaire (Appendix A) as well as a summary of the participant demographics. The time required to complete the questionnaire for each participant

was less than five minutes. Post yoga education session, five questionnaires were collected and placed in a securely marked folder file. All participants met the inclusion criteria for participation in the quality improvement project as all were active staff members or providers of the clinic. Responses obtained from the questionnaire were analyzed and reported as percentage ratios by the QI project director. Resources used include paper, pens, and pencils for questionnaire completion. Microsoft Word table was used to organize and analyze the data.

Demographic data obtained in the questionnaire included age, gender, and position at the clinic to describe the assessment of the participants' thoughts on yoga as a therapeutic treatment option for older adults with depression. Participants were Notre Dame staff members and providers that include a psychiatrist, nurse practitioner, medical assistants, and scribe. Four out of the five participants were female (Table 1) and identified as medical assistants, scribe and nurse practitioner (Table 3). The majority of the participants were between the age 21-30 and 41-50 years (Table 2). Post yoga education questionnaires indicated all participants answered 'yes' to the fact yoga would be helpful as a treatment modality for depressive conditions among older adults (Table 3). All five participants responded 'yes' to the question on whether the education session was beneficial for their future practice at the clinic and all five of them indicated they were open to recommending yoga as an adjunct therapy for older adults with depression (Table 3). The fourth question asked what the staff needed to feel confident in recommending yoga to older adults with depression. More than half of the staff indicated they felt education and referral for alternative therapies such as relaxation therapy and meditation were needed for their patient population while the remaining participants suggested more education on yoga education would

be helpful. The results of the quality improvement intervention were shared with the clinical director in an executive summary.

TABLE 1. *Gender*

Gender	Frequency	Percentage
Male	1	20.0
Female	4	80.0
Total	5	100.0

Responses in %

TABLE 2. *Participants age*

Participant Age	Frequency	Percentage
21-30	2	40.0
31-40	1	20.0
41-50	2	40.0
Total	5	100.0

Responses in %

TABLE 3. *Practice setting and responses of yoga as a treatment option.*

Practice Setting	Frequency (Yes/No)	Percentages
Psychiatrist	1	100.0 0
Nurse Practitioner	1	100.0 0
Scribe	1	100.0 0
Medical Assistants	2	100.0 0
Total	5	100

Responses in %

Referral to Yoga

Number of referrals that were made to yoga at 15 days and 30-days post education session was none.

Ethical Considerations

Ethical principles of respect were applied to allow participating participants to exercise autonomy to participate in this QI project completely and with the option to decline participation or decide to withdraw from the project at any time. Ethical considerations on beneficence were

honored to ensure a beneficial outcome as well as efforts to ensure harm reduction for all participants. The ethical dimension of justice was achieved which ensured fairness of inclusion and exclusion criteria for all clinical staff who participated in the education session on yoga. Efforts were maintained to ensure the protection of the privacy of the participants in the QI project.

Implications for Nursing

Providing the best delivery of care is the hallmark of nursing practice. This project supports education and engagement of the practitioner in patient's engagement in therapeutic yoga as part of the psychiatric care (Butterfield, Schultz, Rasmussen, & Proeve, 2017). It enhances the practitioner's role, promoting evidence-based consumer center care (Butterfield, Schultz, Rasmussen, & Proeve, 2017). Yoga shares similar principle with nursing practice in the area of holistic systems of health that incorporates a person's physical, mental and spiritual health (Gard et al., 2012; Kinser et al., 2013a). Yoga as an adjunct treatment for depression can provide beneficial opportunities for holistic care and promote the science of nursing to integrate yoga education as part of care delivery (Butterfield, Schultz, Rasmussen, & Proeve, 2017). The impact on advance nursing practice promotes evidence-based knowledge and confidence in recommending effective, yoga-based interventions.

DISCUSSION

The purpose of this project was to educate mental health providers in an Arizona clinic on the benefits of yoga for older adults with depression. It was difficult to gain the confidence of the clinic staff to schedule the educational seminar on yoga and the benefits of improving mental health. Relevant barriers were encountered that include accessibility and time in getting

individual staff together at one time for the education session. The clinic staff interest was ignited when the yoga instructor demonstrated how yoga could improve depressive symptoms and act as an adjunct to treatment. They were eager to learn during the education session and were appreciative of the session. The project provided an opportunity to acquire new insight into incredible benefits of chair yoga that include motion of exercises and yoga poses. Providing such education in the future should address varying populations including adolescents to older adults and should incorporate different types of yoga.

The Iowa evidence-based practice guides the implementation of the project which is educating mental health clinic providers on the benefits of yoga for older adults. It provided the framework that guided the integration of the eight steps of the model aimed to answer the clinical question and predicted outcomes.

Certain factors could be instrumental to issues with lack of referrals after the education. The insurance coverage accepted by the provider may not provide a coverage for the referral because of variation in health plans. Additional time, beyond the 30 day follow up timeframe, following the educational seminar would be important for future projects to get a better understanding of the impact of the education session on clinical practice and referrals.

Follow-up Data

The purpose of this project was to educate the mental health providers in an Arizona Clinic on the benefits of yoga for older adults with depression. The project director sought to evaluate the effectiveness of yoga education on mental health providers. Follow-up assessments were made 15 days and 1 month post the educational intervention and follow-up data was collected via telephone to determine if clinic referrals were initiated for yoga. Post education

follow up interviews with clinic staff indicated they felt comfortable recommending the implementation of yoga into practice as an adjunct therapy however, no patient referrals were initiated post the education session on yoga. Other follow-up results include the education had some positive benefits on the practice to consider yoga as an alternative modality for depressive conditions among older adults.

Conclusion

This QI project offered the opportunity to assess the mental health providers perceptions on yoga as an adjunct therapeutic treatment option for older adults with depression. This project revealed a supportive response from mental health clinic providers and staff indicating they do support the implementation and recommendation of yoga as an adjunct treatment option for older adults with depression. It is cost effective and most importantly, produces many benefits (physical, psychological) as a treatment option for depression. Further research is still required to determine the overall effectiveness and relevance of educating mental health clinic providers on the alternative treatment options for older adults dealing with chronic mental illness.

APPENDIX A:
POST-YOGA EDUCATIONAL QUESTIONNAIRE

AGE:

GENDER:

POSITION/TITLE:

1. Is yoga helpful as a treatment modality for depressive conditions among older adults?	YES	NO
2. Was the yoga education session beneficial to you in your future practice here at Notre Dame?	YES	NO
3. Are you open to recommending yoga as an adjunct therapy for older adults with depression?	YES	NO
4. What else do you need to feel confident in recommending yoga to older adults with depression?		

APPENDIX B:
YOGA REFERRAL LOG

APPENDIX C:
THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL
LETTER



Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://rgw.arizona.edu/compliance/home>

Date: October 11, 2018
Principal Investigator: Kalu Nnate Okorie

Protocol Number: 1810013662
Protocol Title: Educating Mental Health Clinic Providers on the Benefits of Yoga for Older Adults

Determination: Human Subjects Review not Required

Documents Reviewed Concurrently:

Data Collection Tools: *POST YOGA EDUCATION QUESTIONNAIRE.DOCX*

HSPF Forms/Correspondence: *Advisor Confirmation Email.pdf*

HSPF Forms/Correspondence: *determination_2-3_v2018_4.pdf*

Other Approvals and Authorizations: *Site Authorization Letter.pdf*

Protocol: *Yoga Referral Log.docx*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(1): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX D:
EVIDENCE TABLE

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) Adults	Data Collection (Instruments/Tools)	Findings
Bilderbeck et al. (2013)	Investigate the effect of yoga on biological measures in the context of depressive symptomology.		RCT	53	BIS-11, Positive and Negative Affect Scale; Perceived Stress Scale; BSI	Yoga improves well-being and mental health.
Bridges & Sharma (2017)	Examine yoga effectiveness as an alternative treatment of a complementary form of therapy for depression.		RCT	136	Depressive Anxiety Scale	Yoga is used to influence depression outcomes in a population with depressive disorder.
Chao-Jung et al. (2014)	Evaluate feasibility, efficacy, yoga as an adjunct treatment with MDD.		RCT	60	Likert Scale	Effective in reducing fatigue, not depression and anxiety.
Cramer et al. (2017)	Evaluate the feasibility of yoga exercise program.		RCT	53	Beck's Depression Inventory	There is a definite effect on the use of yoga for depression.
Crapal et al. (2011)	Yoga as a complementary treatment for a psychiatric disorder.		RCT	243	Beck's Depression Inventory	Significant effect as an adjunct for treatment of depression.
Meisler & Juckel (2017)	Qual: Yoga practice as self-management approach to achieve psychological well-being.		RCT	60	PHQ-0; Rumination Response Scale; Behavioral activation for depression scale.	Yoga play safe intervention for the mechanism of changes in individuals with MDD.

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Theoretical Framework	Design	Sample (N) Adults	Data Collection (Instruments/Tools)	Findings
Meyer et al. (2012)	Investigate the efficacy and safety of yoga interventions in depression.		RCT	30	Amristar Depression Inventory; Zung Self-Rating Depression Scale	Yoga improves mood disorders.
Prathikanti et al. (2017)	Yoga as potential mono-therapy for mild-to-moderate major depression.		RCT	32	Beck's Depression Inventory	Yoga is cost-effective for depressive disorder.
Sharma et al. (2017)	Effect of yoga in a sample of prisoners.		RCT	25	Hamilton Depression Rating Scale (HDR-17)	Significant improvement in depressive symptoms.
Shohani et al. (2018)	Effects of yoga, stress, anxiety and depression.		Quasi-experimental pre- and post-test.	52	Depression Anxiety Scale-21	Yoga has an active role in reducing stress, anxiety and depression.

APPENDIX E:
FACILITY APPROVAL LETTER

The Medical Director
Notre Dame Behavioral Health
14811 Bell Rd #102
Surprise, AZ 85374
Date: September 17, 2018

Kalu Okorie
17737 W Larkspur Dr.
Surprise, AZ 85388


RE: FACILITY APPROVAL LETTER

We have approved and accepted the invitation to collaborate with you, Kalu Okorie of the University of Arizona, to complete the aims of your project titled "Educating Mental Health Clinic providers on the Benefits of Yoga for Older Adults." as outlined in your request letter.

We look forward to working with you to realize the implementation of the specific aims of your project.

Sincerely,

Dr. Hanj Ashamalla
Medical Director



a/17/18

REFERENCES

- Ali, Z. (2014). Effect of exercise on psychological well-being. *Journal of Nursing*, 4(3), 1-4.
- Arizona Department of Health Services (ADHS). (2014) *Aging in Arizona: Health status of older Arizonans*. Retrieved from <http://www.azdhs.gov/plan/report/aging/aia-report-2012.pdf>
- Bridges, L. & Sharma, M. (2017). The efficacy of yoga as a form of treatment for depression. *Journal of Evidence-based Complementary & Alternate Medicine*, 22(4), 1017-1028.
- Buckwalter, K. C., Cullen, L., Hanrahan, K., Kleiber, C., McCarthy, A. M., Steelman, V., ... Tucker, S. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. Retrieved from <https://doi.org/http://dx.doi.org.ezproxyi.library.arizona.edu/10.1111/wrn.12223>
- Butterfield, N., Schultz, T., Rasmussen, P., & Proeve, M. (2017). Yoga and mindfulness for anxiety and depression and the role of mental health professionals: A literature review. *The Journal of Mental Health Training, Education, and Practice*, 12(1), 44-54. <https://doi.org/https://doi.org/10.1110/JMHTEP-01-2016-0002>
- Cahoon, C. G. (2012). Depression in older adults: A nurse's guide to recognition and treatment. *American Journal of Nursing*, 112(11), 22-30.
- Centers for Disease Control and Prevention (2011). *Depression*. Retrieved from <http://www.cdc.gov/mentalhealth/basics/mental-illness/depression.htm>
- Chao-Jung, T., Huey-Shyan, L., Wen-Li, L., Shu-Ming, C., Wen-Tsung, H., & Shang-Wen, C. (2014). The effect of yoga exercise on improving depression, anxiety, and fatigue in women with breast cancer: A randomized controlled trial. *The Journal of Nursing Research*, 22(3), 155-164.
- Cheung, L. K. & Lee, S. (2018). A randomized controlled trial on an aerobic exercise program for depressive outpatients. *Sports Sciences for Health*. <https://doi.org/https://doi.or/10.1007/s11332-017-0423-0>
- Cholera et al. (2014). Validity of patient health questionnaire-9 to screen for depression in high-HIV burden primary healthcare clinic in Johannesburg, South Africa. *Journal of Affective Disorders*, 167, 160-166.
- Cooney, G., Dwan, K., & Mead, G. (2014). Exercise for depression. *Journal of American Medical Association*, 311, 23.
- Cramer, H., Aneyer, D., Lauche, R., & Dobos, G. (2013). A systemic review of yoga for major depressive disorder. *Journal of Affective Disorders*, 213, 70-77.

- Cramer, H., Ward, L., Saper, R., Fishbein, D., Dobos, G., & Lauche, R. (2015). The safety of yoga. *AM J Epidemiol*, *182*, 281-293.
- Crapal, P., Meyer, H. B., & Ames, D. (2011). The effectiveness of yoga therapy as a complementary treatment for major psychiatric disorders. A meta-analysis. *The Primary Care Companion to CNS Disorders*, *13*(4), PCC.10r01068.
<https://doi.org/http://doi.org/10.488/pcc.10r01068>
- Depression: Medicare population. (2015). Retrieved May 21, 2018 from www.arizonahealthmatters.org/index.php?module=indicators&controller=index&action=view&indicatorid=2058&localeid=5
- Doody, C. M. & Doody, O. (2013). Introducing evidence into nursing practice using Iowa model. *British Journal of Nursing*, *20*, 661-664.
<https://doi.org/doi:10.12968/bjon.2011.20.11.661>
- Gard, T., Brach, N., Holzel, B. K., Noggle, J. J., Conboy, L. A., & Lazar, S. W. (2012). Effect of yoga-based intervention for young adults on quality of life and perceived stress: The potential mediating roles of mindfulness and self-compassion. *Journal of Positive Psychology*, *7*(3), 165-75.
- Kvam, K., Nordhus, I., & Hovland, A. (2016). Exercise as a treatment for depression: A meta-analysis. *Journal of Affective Disorders*, *202*, 67-86.
- Meister, K. & Juckel, G. (2017). A systemic review of mechanisms of change in body-oriented yoga in major depressive disorders. *Pharmacopsychiatry*. Retrieved from [doi:10.1055/s.0043.111013](https://doi.org/doi:10.1055/s.0043.111013)
- Meyer, H., Katsman, A., Sones, A., Auerbach, D., Donna, A., & Rubin, R. (2012). Yoga as an ancillary treatment for neurological and psychiatric disorders: A review. *Neuropsychiatry Clinical Neuroscience*, *24*(2), 152-164.
- Moriarty, A. S., Gilbody, S., McMillan, D., & Manea, L. (2015). Screening and case finding for major depressive disorder using the patient health questionnaire (PHQ-9): A meta-analysis. *General Hospital Psychiatry*, *37*(6), 567-576.
- Polit, D. F. & Beck, C. T. (2017). *Nursing research: Generating and assessing evidence for nursing practice* (10th ed.). Philadelphia, PA: Wolters Kluwer.
- Prathilkanti, S., Rivera, R., Cochran, A., Tungol, G., Fayazmanesh, N., & Weinmann, E. (2017). Treating major depression with yoga: A prospective, randomized, controlled pilot trial. *PLoS ONE*, *12*(3), e0173869.
<https://doi.org/https://doi.org/10.1371/journal.pone.0173869>

- Queleennec et al. (2013). Potential clinic impact of medication discrepancies at hospital admission. *European Journal of Internal Medicine*, 24, 530-535.
- Ramanathan, M., Bhavanani, A., & Trakroo, M. (2017). Effect of a 12-week yoga therapy program on mental health status in elderly women inmates of hospice. *International Journal of Yoga*, 10(1), 24-28.
- Rana, J. S. & Sharma, J. (2017). Depression in the elderly patients attending the psychiatry OPD: A prospective hospital-based study. *International Archives of Biomedical and Clinical Research*, 3(4), 84-87.
- Rosenbaym, S., Tiedemann, A., Sherrington, C., Curtis, J., & Ward, P. (2014). Physical activity interventions for people with mental illness: A systematic review and meta-analysis. *Journal of Science and Medicine*, 18, e150.
- Ross, A. & Thomas, S. (2010). The health benefits of yoga and exercise: A review of comparison studies. *The Journal of Alternate and Complementary Medicine*, 16(1), 3-12.
- Satish, L., & Lakshmi, V. S. (2016). Impact of individualized yoga therapy on perceived quality of life performance on cognitive task and depression among type 2 diabetic patients. *International Journal of Yoga*, 9(2), 130-136. <https://doi.org/doi: 10.4103/0973-6131.183707>
- Shohani, M., Badfar, G., Nasirkandy, M., Rahmati, S., Modmeli, Y., Soleymani, A., & Azami, M. (2018). Effect of yoga on stress, anxiety, and depression in women. *International Journal of Preventive Medicine*, 9(1), 21.
- Slabaugh, L. S., Maio, V., Templin, M., & Abouzaid (2012). The prevalence and risk of polypharmacy among the elderly in an outpatient setting. *Drug and Aging*, 41, 58-69.
- Steelman, V. M. (2015). The 2015 revised Iowa model for infusing evidence-based practices globally. Paper presented at the Sigma Theta Tau International 26th International Nursing Research Congress.
- Stussman, B. J., Black, L. I., Barnes, P. M., Clarke, T. C., & Nahin, R. L. (2015). Wellness-related use of common complementary health approaches among adults. The *United States, 2012 National Health Statistics Report*,
- Titler, M. G., Kleiber, C., Steelman, V. J., Rakel, B. A., Budreau, G., Everett, L. Q., & Goode, C. J. (2001). The Iowa model of evidence-based practice to promote quality care. *Critical Care Nursing Clinics of North America*, 13(4), 497-509.
- Uebelacker, L. A. & Broughton, M. K. (2016). Yoga for depression and anxiety: A review of published research and implications for healthcare providers. *Rhode Island Medical Journal*.

United States Census Bureau (2016) *Population over age 65: State AZ*. Retrieved from <http://www.census.gov>

Woldetensay et al. (2018). Validation of the patient health questionnaire (PHQ-9) as a screening tool for depression in pregnant women: Afaan Oromo version. *PLOS ONE*, 13(2), e0191782. <https://doi.org/https://doi.org/10.1371/journal.pone.0191782>

Wuncher, S. S. (2014). Integrative review of implementation strategies for translation of research-based evidence by nurses. *Clinical Nurse Specialist*, 28(4), 214-223. <https://doi.org/doi:10.197NUR.0000000000000015>