Introduction

Stress, burnout, and anxiety are common complaints among nurses causing job dissatisfaction, emotional exhaustion, physical exhaustion, and mental depletion[1]. Chronic stress and anxiety impacts nurses' ability to remain engaged, non-reactive, and constructive, which may affect the ability to stay in the profession[2]. Given the well-documented nursing shortage, nurses retention through stress reduction activities should be transitioned into routine practice for nursing administration[3]. Nurses often have poor health outcomes, including high rates of depression, anxiety, and obesity, which are associated with stressful work environments[4]. There is substantial evidence that supports the use and practice of animal assisted therapies among student nurses and is shown to beneficial in decreasing anxiety[5]. Despite strong evidence, animal assisted therapy for nurse's work anxiety is not implemented as a standardized practice within medical center and more specifically on nursing units. Nurse leaders have a great responsibility to implement measures that cultivate a culture where nurses' potential stress, burnout and anxiety are being prioritized.

Animal Assisted Therapy (AAT) also known as Animal- Facilitated Therapy (AFT) or Pet Assisted Therapy (PET) is the use of trained animals for the therapeutic benefit. Animal assisted therapy with trained certified therapy dogs involves a personalized and structured visit by a volunteer (dog's handler) and the volunteer's trained certified therapy dog. A visit by a therapy dog typically lasts about 10–15 minutes, with the patient interacting with the therapy dog while the dog is supervised by the handler[6]. Evidence supports physiologic effects of AAT include reduction in heart rate, cortisol level, improvements in blood pressure control, and decrease in Immunoglobulin A level[7]. Animal assisted therapy can be included in the treatment of depression, anxiety, and other psychological diseases by helping with the experience of joy, sense of relief, and relaxation[7]. Animal assisted therapy is seen to be beneficial for healthcare workers in the work setting. In one study, emergency healthcare providers (nurses, residents, and emergency physicians) had lower end-of-shift salivary cortisol and anxiety with therapy dog exposure compared to control subjects[8]. These findings suggested that therapy dogs can reduce cognitive and physiological stress experienced by emergency care providers while on duty in the emergency department.

Nurses encounter stressors that can have a negative impact on their psychological well-being. Nurses are at the forefront of patient care and heavy workloads can leave them overworked and stressed[9]. The demanding nature of

the occupation exposes nurses to a higher risk of developing negative mental states such as depression, anxiety, and stress[8]. Nurses often experience a variety of work-related stressors such as long work hours, patient time constraints, unable to meet patient needs, irregular schedules, and lack of professional support. The ongoing strain faced by nurses could have a severe impact on their mental health and personal quality of life[9]. Nursing is one of the most stressful occupations worldwide, and the mental health management of this profession warrants more attention to identify possible ways to cope with stress, anxiety, and professional pressures. There is a dire need for theoretically based empirically supported interventions that will create a therapeutic professional nursing environment that decreases work related anxiety and improve nursing experiences while at work. Pet therapy is a low-tech, low-cost therapy that improves mood and is meaningful[10] and when incorporated in nursing units and medical centers, can decrease work related anxiety in nurses. The purpose of this correlational investigative study is to determine whether animal assisted therapy as an intervention improves work related anxiety outcomes in registered nurses in a tertiary healthcare setting and actively working on an in-patient care unit as a patient care provider.

Review of Literature

An electronic search using PubMed and ProQuest databases was conducted to generate a list of peer reviewed literature published between 2017-2021, full text, English, and available online for all searches was used. For the first search, the search terms utilized include: "hospital-based nurses" OR "inpatient nurses" OR "acute care nurses" AND "pet therapy" OR "pet assisted therapy" OR "animal assisted therapy" AND "anxiety" OR "stress" OR "burnout". This initial search led to too many results, but there were many results that used the phrase pet therapy and Anxiety reduction. The search was refined and specific regarding the intervention not necessarily the population. There was also consideration for how to refine the search regarding evaluation measures and added terms related to subjective data collection. The final search yielded 10 results that all appeared to be heavily relate to the intervention, assessment tool and outcomes. There was very little documented level 1 studies reflecting direct care nursing as the population or work-related setting with pet therapy as the intervention. There were two level 2 studies supporting nursing and the working environment, but many of the supporting articles focused on pet therapy in patients but little is available regarding staff perceptions and feelings of anxiety lessened from working with animals on the nursing unit. The exhausting review uncovered few studies that targeted the relationship of these

specific factors as defined above. Furthermore, the evidence available showed inconsistencies in study findings. The review of literature uncovered gaps in literature and evidence related to pet therapy, animal assisted therapy, canine assisted therapy, and nurse work anxiety. For the articles that were located and semi-relevant, research appraisal was completed using John Hopkins Evidence Level and Quality Guide.

A level IIB cross-sectional research pilot study surveyed staff members working on a cardiovascular step-down unit (CVSU) in an inpatient hospital setting or at a medical clinic located on a university campus and included a representation of the organization's workforce[10]. Outcomes were significant in many of the tested hypothesis including "visiting dogs will take staff members minds off stress" ($p<.001$) and "visiting dogs will help staff members relax" ($p<.001$). The article addressed the positive attitudes of nurses and the perception of nurse well-being, it did not implement a pet therapy or animal assisted therapy program.

A level IIB repeated cross-sectional study consisted of two questionnaires for staff members in a Swiss rehabilitation clinic which introduced an animal-assisted therapy program[11]. This study included more than just nursing in the work environment as it included healthcare providers and administrative staff members representing 24.5% of the staff at the clinic (35.9% nurses) in the first survey and 37.8% of total staff (16.4% nurses) in the second survey. The positive impact analysis revealed that staff members had high positive attitudes before the implementation of animal assisted therapy ($M = 5.16$, $SD = 0.67$) and 97.0% stated that animal assisted therapy enhances the value of the therapeutic concept, and that 81.3% of those surveyed thought that the presence of the animals would enrich his/her job. Even though this article supports animal assisted therapy, it did not measure staff anxiety.

A level IA experimental study used a randomized control convenience sample of nursing students[5]. The study uses a pre-pre-post-post design, and the sample was divided into two groups with participants randomly assigned to an intervention group and a control group. The overall goal was to determine if animal assisted therapy reduced anxiety. A MANOVA was conducted and determined a statistically significant difference between the state and trait anxiety of the intervention ($n = 45$) and control groups ($n = 44$) Wilk's $\Lambda = 0.761$, partial $\eta^2 = 0.239$, $F(8,79) = 3.103$, $p < 0.01$. A univariate one-way Analysis of Variance (ANOVA) was completed as well and determined a

statistically significant difference for both state $F(1,86) = 14.031$, p < 0.001, partial $\eta^2 = 0.140$, and trait $F(1,86) = 6.647$, p = 0.012 anxiety between the intervention and control groups at the time of the post-test. This is one study that measured anxiety, but the population was nursing students not registered nurses.

Research Question

The primary research question being investigate in this prospective study is, for nurses working at a Midwest Tertiary Care Center located in Central Illinois, does the implementation of an animal assisted therapy program reduce nurse work anxiety as measured by Beck's Anxiety Inventory Tool over a 30-day period?

Methods

This was a prospective study using a convivence sample of direct patient care registered nurses and licensed practical nurses. Direct patient care registered nurses had to be actively working within one of the in-patient units or the within one the medical groups outpatient clinics. Recruitment occurred via advertisement with unit-based flyers and emailing. A power analysis using an alpha .05 and 95% CI suggested a sample size of 44 or greater would be needed to prevent a type 1 error. The intervention was completed over a four-week continuous period with one day time intervention and one nighttime intervention per week. There are four animal assisted therapy day interventions that will run from 11am-2pm (3 hours) and there are four animal assisted therapy night interventions that will run from 6pm-9pm (3 hours). Variable control was accomplished by having the intervention in the same on-site neutral location for all participants and using the same therapy dogs for all participants.

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