

# International Journal of Nursing and Health Care Research

Wolf ML. Int J Nurs Res Health Care: IJNHR-162.

DOI: 10.29011/IJNHR-162.100062

## Research Article

## Identifying Interventions to Reduce Anxiety and Promote the Successful Transitioning of our Next Generation of Nurse Practitioners

Michele L. Wolf \*

Department of Nursing, University of Tampa, Tampa, Florida, USA

**\*Corresponding author:** Michele L. Wolf, DNP, APRN, FNP-BC, Master of Science in Nursing (MSN) Program Director, Assistant Professor, Department of Nursing, University of Tampa, 401 W. Kennedy Blvd., Tampa, FL 33606, USA. Tel: +1-8132573179; Email: mwolf@ut.edu

**Citation:** Wolf ML (2018) Identifying Interventions to Reduce Anxiety and Promote the Successful Transitioning of our Next Generation of Nurse Practitioners. Int J Nurs Res Health Care: IJNHR-162. DOI: 10.29011/IJNHR-162.100062

**Received Date:** 03 December, 2018; **Accepted Date:** 21 December, 2018; **Published Date:** 28 December, 2018

### Abstract

**Background:** Anxiety experienced by nursing students at all points and all levels of education is a well-documented phenomenon both in and outside the United States. Nursing students have higher levels of state anxiety than students with other majors. High levels of anxiety lead to attrition of our next generation of nurse practitioners.

**Methods:** A descriptive, cross-sectional study was done to evaluate anxiety in Master of Science in Nursing (MSN) students during the clinical portion of the program. Data were collected from a convenience sample of 73 students (N=73) during a conference at the university. Data was collected using the State Anxiety Subset (S-Anxiety) version of State-Trait Anxiety Inventory-Adult (STAI-A).

**Results:** Due to a small population for the study and the inability to link pre-survey and post-survey data to MSN demographic information, the findings of this study were not statistically significant. Albeit, statistical significance was not appreciated in this project, an overall decrease in total pre-survey state anxiety did occur when compared with the total post-survey level of anxiety.

**Conclusion:** Implementation of interventions to dispel the fear of the unknown can lead to decreasing overall anxiety in MSN students.

**Keywords:** Anxiety; Becoming; Fear; Perception; Role Ambiguity; Transition/Transitioning

patients. Without ARNPs filling the physician gap, patients will suffer due to delayed access to care.

### Purpose

The purpose of this study is to obtain quantitative data to support that the implementation of an intervention, which diminishes the unknown for MSN students, will lead to decrease state anxiety. As a result, an increase in successful transitioning of MSN students into their ARNP roles, will lead to more confident and competent primary care providers. ARNP providers that are not lost during their tenure in MSN programs will be available and capable to fill the projected gap in the United States of primary care providers. Improved patient outcomes will be realized as a result of the accessibility of qualified primary care providers to

### Methods

Data collection for this Quality Improvement Project (QIP) occurred at two pre-scheduled meetings with MSN students in the clinical portion of their program at two different points in the semester. At both of these meetings the State-Trait Anxiety Inventory-Adult (STAI-A) was administered to all students who agreed to voluntarily participate after verbal consent was obtained by the Project Director (PD). The STAI-A is one of the most sanctioned and widely used tools to quantify subjective measures of anxiety [1]. The STAI-A is a survey that contains 20 questions followed by self-report scales. There are two subsets within this

tool, with 20 questions to measure state anxiety and 20 questions to measure trait anxiety. For the purpose of this project, only the state anxiety subset (S-Anxiety) was administered to participants. STAI-A (S-Anxiety) uses a Likert scale is used for each of the 20 questions that evaluate how the MSN student is feeling “At this moment.” Responses to these 20 questions range from 1) “Not at all,” 2) “somewhat,” 3) “Moderately so,” and 4) “Almost always.” At the first meeting, the STAI-A (S-Anxiety) was administered for the first time to all MSN students in the clinical portion of the program who agreed to participate in the QIP. This was the pre-survey component of the QIP and data set one was obtained at this time. The objective of the pre-survey was to evaluate the MSN student’s level of state anxiety at that time. The second data collection point occurred at the next monthly meeting of the semester where all MSN students in the clinical portion of the program were present. At this meeting, an intervention was implemented to attempt to reduce state anxiety in this same cohort of MSN students. Again, participation was voluntary and verbal informed consent was obtained. Then the same survey, STAI-A (S-Anxiety) was administered as the post-survey to evaluate the MSN students’ response to the intervention and to determine if an overall reduction in state anxiety occurred.

The intervention was a formal discussion between a five-member panel and the current MSN students in the clinical portion of the program in a small private university setting. This panel consisted of former MSN students, from this same university, who had graduated within one year of the date of this meeting. All five alumni of this MSN programs are currently credentialed and practicing ARNPs in the state of Florida. The meeting was 90-minutes and the panel of five ARNPs were instructed by the PD to speak to the current MSN clinical students about (1) Experiences in the clinical portion of this program; (2) What to expect after graduation; (3) Taking National Boards; (4) Interviewing for the first job as an ARNP and negotiating their contracts; (5) Share first-year experiences as an ARNP.

## Results

The project director is faculty where the quality improvement project was implemented. Therefore, data analysis was driven by the guidance of the IRBs to assist the PD in the avoidance of potentially creating a power differential. One of the methods used to avoid a potential power differential was not using identifiers to

match the pre- and post-data sets, thus ensuring the anonymity of all participants. Albeit this ensured anonymity, the lack of ability of match pre- and post-data sets for statistical analysis was limited to identifying if a reduction of state anxiety occurred from the pre-survey and post-survey groups as a whole. Individual participants, where Number of Years in Nursing and the Semester of the Program they are in as a MSN Student, could not be linked. In addition to the reduction of state anxiety from the pre-survey group and the post-survey group, the PD also evaluated the relationship between Number of Years in Nursing and Semester in the Clinical Portion of the MSN Program in both data sets.

## One Sample t-Test

Because the participants were not matched across surveys, a repeated measures analysis could not be used. So, the mean of the pre-survey score was determined and a one-sample t-test on the post-survey data. The one sample t-test evaluated the sample mean to determine if it is significantly different from a specified value. For this QIP, the mean of the pre-test score was specified. This evaluated if the post-survey average was significantly greater than or less than the pre-test average. The one-sample t test between the total post-survey and the test value of 50.01 evaluated the difference between the reported anxiety between the first dataset as a whole and the second dataset as a whole. Therefore, 50.01 is not the post-test anxiety, rather it is the mean/average anxiety score from the pre-survey. The average pre-test anxiety (50.01), was used as the test value for the one-sample t test. In summary, the average pre-test anxiety (50.01) was compared against the average post-test value using the One Sample t-test. The one-sample t-test was conducted to examine whether the total-post survey could have been produced by a probability distribution with a mean of 50.01.

Prior to the analysis, the assumption of normality was assessed. A Shapiro-Wilk test was conducted to determine whether total-post could have been produced by a normal distribution [2]. The results of the Shapiro-Wilk test were not significant,  $W = 0.97$ ,  $p = .195$ . This suggests that the deviations from normality are explainable by random chance; thus, normality can be assumed. The result of the one sample t-test was not significant,  $t(57) = -1.43$ ,  $p = .159$  suggesting that total-post could have been produced by a distribution with a mean of 50.01. Table 1 represents the results of the One Sample t-test.

Variable	M	SD	$\mu$	t	p	d
Total post-survey	47.9	11.27	50.01	-1.43	0.159	0.19

Note: Degrees of Freedom for the t-statistic = 57. d represents Cohen’s d.

**Table 1:** One Sample t-Test for the Difference between Total-Post and 50.01.

Univariate outliers were examined for the total pre- and post-survey. An outlier was defined as any value which falls outside the range of  $\pm 3.29$  standard deviations from the mean. The results of this analysis showed no outliers in any of the selected variables for Total pre-survey or Total post-survey (Table 2).

Variable	No. of Outliers
Total Pre-survey	0
Number of outliers detected for Total post	
Variable	No. of Outliers
Total Post-survey	0

**Table 2:** Number of outliers detected for Total Pre-survey.

## Summary Statistics

Summary statistics were calculated for each interval and ratio variable. Frequencies and percentages were calculated for each nominal variable.

**Frequencies and Percentages:** The most frequently observed category of What clinical semester in the MSN Program are you currently enrolled in? was First Semester (n = 23, 32%). Frequencies and percentages are presented in (Table 3).

Variable	n	%
What clinical semester in the MSN program are you currently enrolled in?		

Variable	M	SD	n	SEM	Skewness	Kurtosis
How many years have you been a registered nurse	7.13	4.16	73	0.49	2.2	6.02
Total pre-survey	50.01	12.01	71	1.43	0.3	-0.1

Note: '-' denotes the sample size is too small to calculate statistic.

**Table 4:** Summary Statistics Table for Interval and Ratio Variables.

## ANOVA

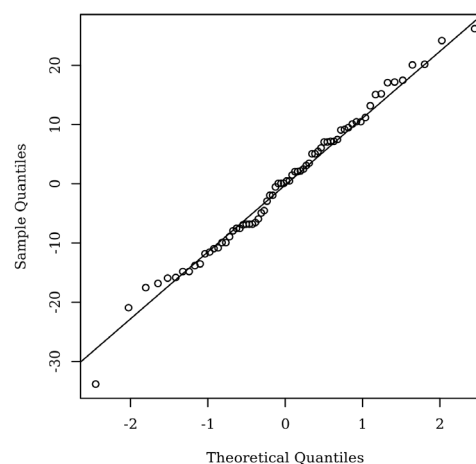
An Analysis of Variance (ANOVA) was conducted to determine whether there were significant differences in total pre-survey by What clinical semester in the MSN program are you currently enrolled in? Prior to the analysis, ANOVA assumptions were examined. Prior to conducting the analysis, the assumptions of univariate normality of residuals, homoscedasticity of residuals, and the lack of outliers were assessed. Normality was evaluated using a Q-Q scatterplot [4,5]. The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution which follows a bell curve). In the Q-Q scatterplot, the solid line represents the theoretical quantiles of a normal distribution. Normality can be assumed if the points form a relatively straight line. The Q-Q scatterplot for normality are presented in (Figure 1).

First Semester	23	31.51
Fourth Semester	16	21.92
Second Semester	14	19.18
Third Semester	19	26.03
Missing	1	1.37

Note: Due to rounding errors, percentages may not equal 100%.

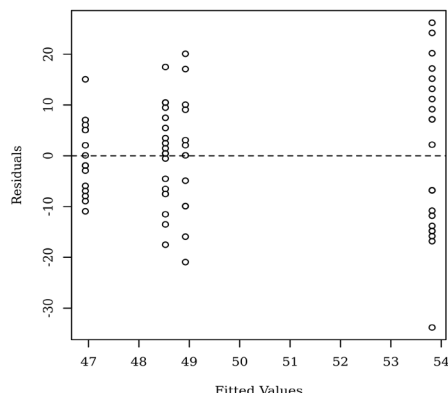
**Table 3:** Frequency Table for Nominal Variables.

**Summary Statistics:** The observations for How many years have you been a registered nurse had an average of 7.13 (SD = 4.16,  $SE_M = 0.49$ , Min = 2.50, Max = 25.00). The observations for Total<sup>M</sup> pre-survey had an average of 50.01 (SD = 12.01,  $SE_M = 1.43$ , Min = 20.00, Max = 80.00). Skewness and kurtosis were also calculated in (Table 4). When the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers [3].



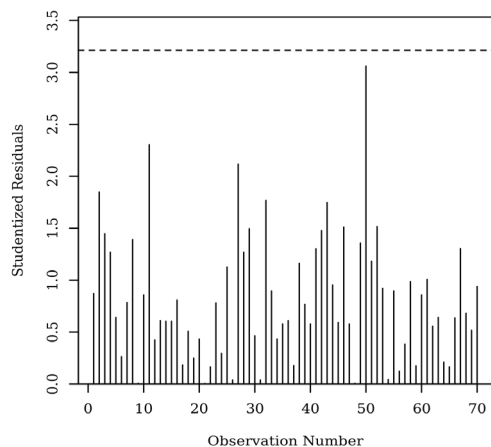
**Figure 1:** Q-Q scatterplot testing normality.

**Homoscedasticity:** Homoscedasticity was evaluated by plotting the residuals against the predicted values [4-6]. The assumption is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 2 represents a scatterplot of predicted values and model residuals.



**Figure 2:** Residuals scatterplot testing homoscedasticity.

**Outliers:** To identify influential points, studentized residuals were calculated and the absolute values were plotted against the observation numbers [4,7]. Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a studentized residual greater than 3.21 in absolute value, the .999 quartile of a t distribution with 69 degrees of freedom, was considered to have significant influence on the results of the model. Figure 3 represents the studentized residuals plot of the observations. Observation numbers are specified next to each point with a studentized residual greater than three.



**Figure 3:** Studentized residuals plot for outlier detection.

**Results:** The results of the ANOVA were not significant,  $F(3, 66) = 1.22$ ,  $p = .310$ , indicating the differences in Total Pre-survey among the levels of What clinical semester in the MSN program are you currently enrolled in? were all similar (Table 5). The main effect, what clinical semester in the MSN program are you currently enrolled in? was not significant at the 95% confidence level,  $F(3, 66) = 1.22$ ,  $p = .310$ , indicating there were no significant differences of Total Pre-survey by What clinical semester in the MSN program are you currently enrolled in? The means and standard deviations are presented in (Table 6).

Term	SS	df	F	p	$\eta_p^2$
What clinical semester in the MSN program are you currently enrolled in?	526.43	3	1.22	0.31	0.05
Residuals	9503.87	66			

**Table 5:** Analysis of Variance Table for Total Pre-survey by What clinical semester in the MSN program are you currently enrolled in?

Combination	M	SD	n
First Semester	53.82	16.03	22
Fourth Semester	46.94	7.22	16
Second Semester	48.92	12.26	13
Third Semester	48.53	9.19	19

Note: - indicate sample size was too small to calculate statistic.

**Table 6:** Means, Standard Deviations, and Sample Size for Total Pre-survey by What clinical semester in the MSN program are you currently enrolled in?

**Post-hoc:** There were no significant effects in the model. As a result, posthoc comparisons were not conducted. In addition, an ANOVA was used to evaluate the relationship between for total post-survey scores of the level of state anxiety and the first demographic question of what semester of the clinical portion of the MSN program the participant was in at the time of the survey, along with a Means table and the Post-hoc Comparisons with Tukey's Honest Significant Difference Test (Table 7.1-7.3).

Term	SS	df	F	p	$\eta_p^2$
Clinical Semester in MSN Program	509.33	4	1	0.415	0.07

**Table 7.1:** Anova.

Combination	M	SD	n
.	52.75	10.082	8
First Semester	48.278	14.037	18
Fourth Semester	43.077	6.422	13
Second Semester	49.2	8.701	5
Third Semester	48.643	12.017	14

Note: - indicate sample size was too small to calculate statistic.

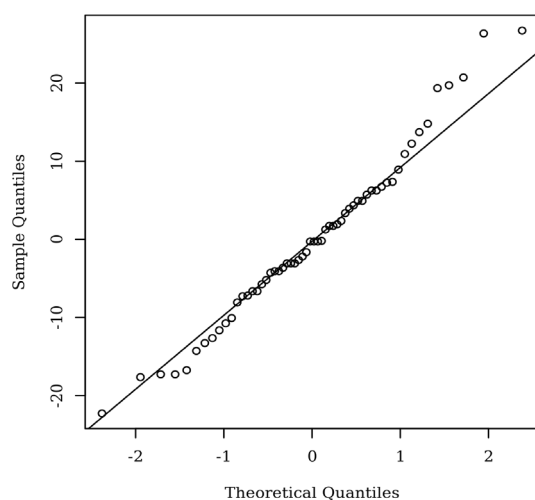
**Table 7.2:** Means Table.

Comparison	M	Lwr Limit	Upr Limit	p
First Semester-	-4.472	-18	9.055	0.883
Fourth Semester-	-9.673	-23.979	4.633	0.325
Second Semester-	-3.55	-21.699	14.599	0.981
Third Semester-	-4.107	-18.217	10.003	0.923
Fourth Semester-First Semester	-5.201	-16.788	6.387	0.712
Second Semester-First Semester	0.922	-15.172	17.016	1
Third Semester-First Semester	0.365	-10.98	11.71	1
Second Semester-Fourth Semester	6.123	-10.63	22.876	0.839
Third Semester-Fourth Semester	5.566	-6.696	17.828	0.703
Third Semester-Second Semester	-0.557	-17.143	16.029	1

Note: M is calculated on the differences between the groups in each comparison. Upper and lower limits for the means were calculated using a 95% confidence interval.

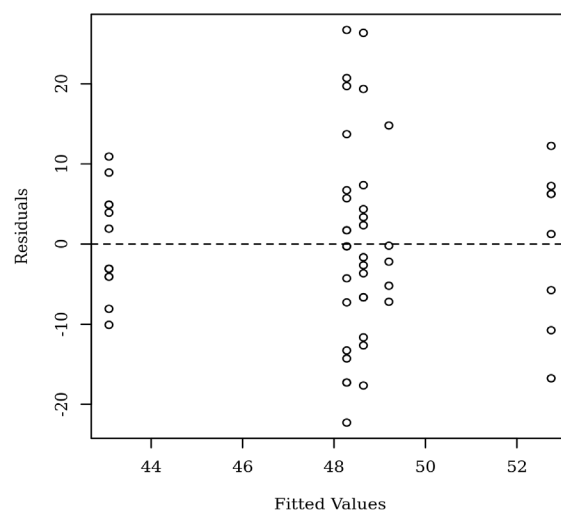
**Table 7.3:** Post-hoc Comparisons with Tukey's Honest Significant Difference Test.

Prior to this analysis, ANOVA assumptions were examined. The assumptions of univariate normality of residuals, homoscedasticity of residuals, and the lack of outliers were assessed. Normality was evaluated using a Q-Q scatterplot [4,5]. The Q-Q scatterplot compares the distribution of the residuals with a normal distribution (a theoretical distribution which follows a bell curve). In the Q-Q scatterplot, the solid line represents the theoretical quantiles of a normal distribution. Normality can be assumed if the points form a relatively straight line. The Q-Q scatterplot for normality are presented in (Figure 4).



**Figure 4:** Q-Q scatterplot testing normality.

Homoscedasticity was evaluated by plotting the residuals against the predicted values [4-6]. The assumption is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 5 represents a scatterplot of predicted values and model residuals.

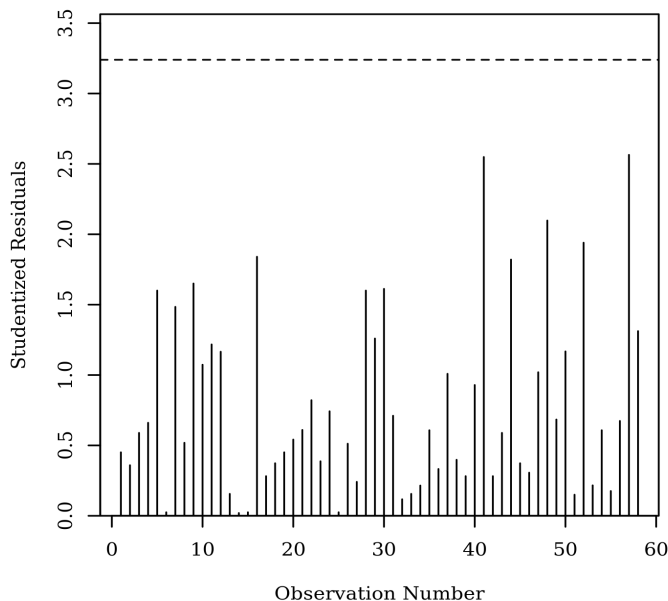


**Figure 5:** Residuals scatterplot testing homoscedasticity.

To identify outliers and influential points, Studentized residuals were calculated and the absolute values were plotted against the observation numbers [4,7]. Studentized residuals are calculated by dividing the model residuals by the estimated



residual standard deviation. An observation with a Studentized residual greater than 3.24 in absolute value, the .999 quartile of a t distribution with 57 degrees of freedom, was considered to have significant influence on the results of the model. Figure 6 represents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than three.



**Figure 6:** Studentized residuals plot for outlier detection.

The results of the ANOVA were not significant,  $F(4, 53) = 1.00$ ,  $p = .415$ , indicating the differences in Total-post among the levels of What clinical semester in the MSN program are you currently enrolled in? were all similar (Table 8). The main effect, what clinical semester in the MSN program are you currently enrolled in? was not significant at the 95% confidence level,  $F(4, 53) = 1.00$ ,  $p = .415$ , indicating there were no significant differences of Total-post by What Clinical Semester in the MSN Program are you currently enrolled in? levels. The means and standard deviations are presented in (Table 9).

Term	SS	df	F	p	$\eta_p^2$
Clinical semester enrolled	509.33	4	1	0.415	0.07
Residuals	6736.05	53			

**Table 8:** Analysis of Variance Table for Total-post by What clinical semester in the MSN Program are you currently enrolled in?.

Combination	M	SD	n
.	52.75	10.08	8
First Semester	48.28	14.04	18
Fourth Semester	43.08	6.42	13
Second Semester	49.2	8.7	5
Third Semester	48.64	12.02	14

Note. - indicate sample size was too small to calculate statistic.

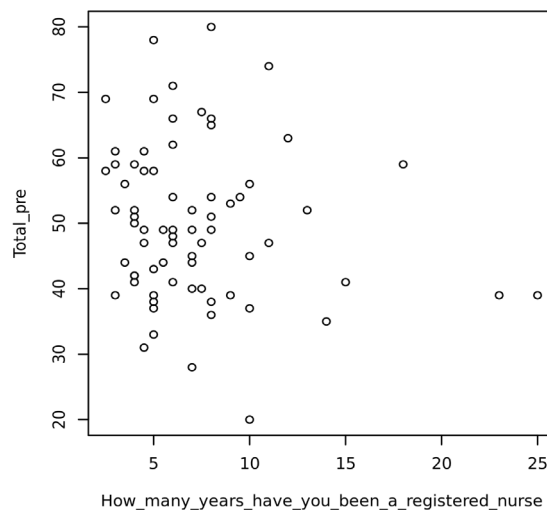
**Table 9:** Means, Standard Deviations, and Sample Size for Total-post by What clinical semester in the MSN Program are you currently enrolled in?

**Post-hoc:** There were no significant effects in the model. As a result, post-hoc comparisons were not conducted.

### Pearson's Correlation Test

A Pearson correlation analysis was conducted between How many years have you been a registered nurse? and Total Pre-survey. Cohen's standard was used to evaluate the strength of the relationship, where coefficients between .10 and .29 represent a small effect size, coefficients between .30 and .49 represent a moderate effect size, and coefficients above .50 indicate a large effect size [8].

**Assumptions:** A Pearson correlation requires that the relationship between each pair of variables is linear [9]. This assumption is violated if there is curvature among the points on the scatterplot between any pair of variables. Figure 7 represents the scatterplot of the correlation.



**Figure 7:** Scatterplot between How many years have you been a registered nurse? and Total Pre-survey.

**Results:** There were no significant correlations between any pairs of variables Table 10 represents the results of the correlation.

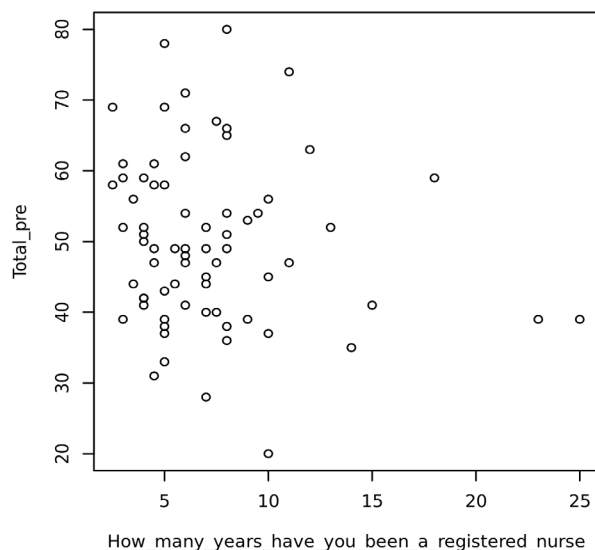
Variable	1	2
1. How many years have you been a registered nurse?	-	
2. Total Pre-survey	-0.15	-
Note: The critical values are 0.23, 0.30, and 0.38 for significance levels .05, .01, and .001 respectively.		

**Table 10:** Pearson Correlation Matrix between How many years have you been a registered nurse? and Total Pre-survey.

### Spearman Correlation Analysis

A Spearman correlation analysis was conducted between How many years have you been a registered nurse? and Total Pre-survey. Cohen's standard was used to evaluate the strength of the relationship, where coefficients between .10 and .29 represent a small effect size, coefficients between .30 and .49 represent a moderate effect size, and coefficients above .50 indicate a large effect size [8].

**Assumptions:** A Spearman correlation requires that the relationship between each pair of variables does not change direction [9]. This assumption is violated if the points on the scatterplot between any pair of variables appear to shift from a positive to negative or negative to positive relationship. Figure 8 represents the scatterplot of the correlation.



**Figure 8:** Scatterplot between How many years have you been a registered nurse? and Total Pre-survey.

**Results:** There were no significant correlations between any pairs of variables. Table 11 represents the results of the correlation.

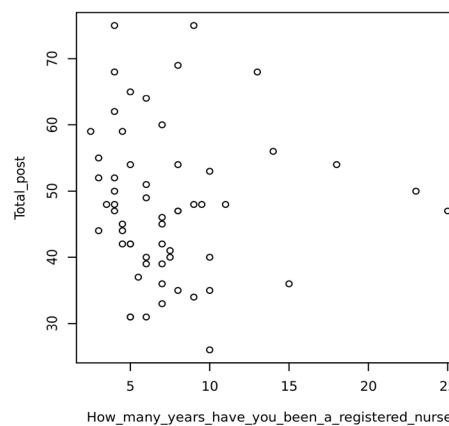
Variable	1	2
1. How many years have you been a registered nurse?	-	
2. Total Pre-survey	-0.12	-
Note: The critical values are 0.23, 0.30, and 0.38 for significance levels .05, .01, and .001 respectively.		

**Table 11:** Spearman Correlation Matrix between How many years have you been a registered nurse? and Total Pre-survey.

A Pearson's Correlation Test was also run to evaluate the relationship between how many years each participant had as a registered nurse and total post-survey level of state anxiety (Table 12). Cohen's standard was used to evaluate the strength of the relationship, where coefficients between .10 and .29 represent a small effect size, coefficients between .30 and .49 represent a moderate effect size, and coefficients above .50 indicate a large effect size [8]. A Pearson correlation requires that the relationship between each pair of variables is linear [9]. This assumption is violated if there is curvature among the points on the scatterplot between any pair of variables. Figure 9 represents the scatterplot of the correlation. There were no significant correlations between any pairs of variables. Table 13 represents the results of the correlation.

Correlation Results with 95% CI:		
Comparison	Lower	R
Years as RN compared to Total Post Survey State Anxiety Scores	-0.3	-0.04

**Table 12:** Pearson Correlation Test.



**Figure 9:** Scatterplot between How many years have you been a registered nurse? and Total-post.

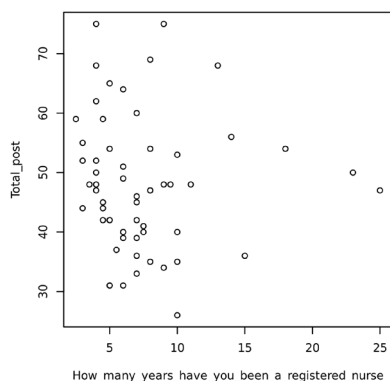
Variable	1	2
1. How many years have you been a registered nurse	-	

2. Total-post	-0.04	-
Note: The critical values are 0.26, 0.34, and 0.42 for significance levels .05, .01, and .001 respectively.		

**Table 13:** Pearson Correlation Matrix between How many years have you been a registered nurse? and Total-post.

### Spearman Correlation Analysis

A Spearman correlation analysis was conducted between How many years have you been a registered nurse? and Total-post. Cohen's standard was used to evaluate the strength of the relationship, where coefficients between .10 and .29 represent a small effect size, coefficients between .30 and .49 represent a moderate effect size, and coefficients above .50 indicate a large effect size [8]. A Spearman correlation requires that the relationship between each pair of variables does not change direction [9]. This assumption is violated if the points on the scatterplot between any pair of variables appear to shift from a positive to negative or negative to positive relationship. Figure 10 represents the scatterplot of the correlation. There were no significant correlations between any pairs of variables. Table 14 represents the results of the correlation.



**Figure 10:** Scatterplot between How many years have you been a registered nurse? and Total-post.

Variable	1	2
1. How many years have you been a registered nurse?	-	
2. Total-post	-0.15	-
Note: The critical values are 0.26, 0.34, and 0.42 for significance levels .05, .01, and .001 respectively.		

**Table 14:** Spearman Correlation Matrix between How many years have you been a registered nurse? and Total-post.

### Discussion

The results of this QIP demonstrate the need for MSN

educators to evaluate programs for high-risk points for state anxiety to occur, the negative impact of state anxiety in student success, and the need to develop strategies to mediate state anxiety in MSN students. Due to a small population for the study and the inability to link pre-survey and post-survey data to MSN demographic information, the findings of this study were not statistically significant. Albeit, statistical significance was not appreciated in this QIP, an overall decrease in total pre-survey state anxiety did occur when compared with the total post-survey level of state anxiety. This assumption was made because according to the STAI Scoring Manual, a high score on the STAI-A(S-Anxiety), indicates a high level of state anxiety. When analyzing the raw data of this QIP, based on the set definition in the STAI Scoring Manual, Pre-Survey State Anxiety raw score was  $M = 50.01$ ,  $SD = 12.01$ . Then, the intervention to attenuate state anxiety was implemented and the post-survey was administered to the participants in the QIP. The post-survey state anxiety raw score was  $M = 47.90$ ,  $SD = 11.27$ . Therefore, state anxiety was alleviated by the intervention as evidenced by a decrease in overall state anxiety on the post survey, after the intervention to alleviate anxiety. This is suggestive that with a larger sample size, done in a setting without the risk of a power differential, there is potential that implementation of interventions to dispel the fear of the unknown can lead to decreasing overall state anxiety in MSN students.

Furthermore, the literature supports as Registered Nurses (RNs) transition from their expert role into their novice role as NPs, it is imperative that educators are aware of the need to recognize anxiety in the MSN students and to implement interventions to dispel their anxiety whenever possible. The fear of the unknown and the resulting state anxiety is not a phenomenon that is exclusive to nursing. Strategies suggested in the literature, that have proven to be effective to alleviate anxiety, are regularly scheduled group meetings, a separate course at the beginning of the program, a course which is broken down into parts and every semester incorporating one part, and peer-led support groups [10].

Currently, the United States (U.S.) has the largest number of nurses in the workforce in the world. The Bureau of Labor statistics, in 2014, estimated there to be 3.1 million nurses in the United States. According to the American Association of Colleges of Nurses (AACN), their most recent survey in 2008, showed that only about 13% of these RNs held an advanced degree such as a MSN. Even more concerning is that the AACN predicts that this number is expected to remain at this level when the data is collected again in 2018.

Compounding the problem of a low percentage of RNs with advanced degrees is the steadily diminishing population of RNs. As the demand for nurses, baccalaureate, masters, and doctoral prepared increases, unfortunately the supply of these professionals continues to dwindle. The percentage of working nurses over 50



years old is more than 50% [11]. It is predicted that almost a half a million nurses will retire and leave the nursing work force within the next ten years [11]. Considering these alarming statistics, retention of RNs who choose to enter into MSN programs, needs to be a top priority.

Achieving the vision of a healthier America and a stable health care environment, is dependent on having the supply of primary care providers exceed or meet the demands of the population. The evidence for the predicted primary care physician shortage in 2025 is indisputable. Studies validate that ARNPs can manage up to 90% of what their physician colleagues can manage in the primary care setting [12]. Moving outside of the clinical setting and into the educational arena, it is important to be cognizant that the average age of a master's or doctoral-prepared nursing faculty with the title of "professor" is 57-61 years-old, respectively [11]. Therefore, MSN student's success will not only drive improved access to care and patient outcomes, it will deliver our next generation of nursing educators.

## Strengths

The major strength of the project is the use of the STAI-A/S-Anxiety survey to collect data. There is strong evidence in the literature to support the internal and external validity of this tool. The use of this tool will afford the project manager the opportunity to provide quantitative data about state anxiety in the MSN student and the effect it has on their ability to successfully transition into their roles as ARNPs. Quantitative data in this area has been identified in the literature as a gap in research on this topic, and this project will be contributing to filling this gap. Another gap which has been identified in the literature is the limited research on state anxiety at the graduate level on nursing students. Therefore, another strength of this project will be the incorporation of quantitative data collected at the graduate level. This project will also set the ground work to build a framework for the implementation interventions to alleviate state anxiety and promote successful transitioning in MSN students. Presently, there is no framework to provide nursing educators an evidenced-based guide to assist students in transitioning from their role as expert RN to novice ARNP.

## Limitations

Limitations of the project, include a small sample size. This is due to the number of students in the clinical portion of the MSN program at the university where the project is being done. Another limitation is the project manager is the director of the MSN program and part of the faculty at the university where the project is being conducted. Although, many efforts have been made to ensure students are aware their participation is completely voluntary and anonymous. Some students might still perceive their grade will

be affected by their responses, or if they do not participate and this might affect their participation and responses to the surveys. Also, the project takes time during one semester with one cohort of students which will limit the generalizability of the results and is a threat to the temporal validity of the project. Finally, the project will take place in one small university's MSN program. This will directly impact the generalizability of the project to MSN students across the nation.

## Conclusion

State anxiety has been identified as a factor, playing a significant role in the ability of RNs to transfer successfully into their new roles as ARNPs [13-17]. The phenomenon of state anxiety and the effect it has on the inability of RNs to transition into novice ARNPs is complicated. State anxiety leads not only to MSN student attrition, but also to unsuccessful transitioning where a growing number of graduates from MSN programs continue to work as RNs after graduation [16]. To complicate this matter further, information in the literature is limited and no current theory or framework exists for graduate faculty to assist MSN students with the transition process [16]. The nursing population is aging, and with continued attrition of MSN students, the nursing profession suffers from a decrease in providers and educators. In addition, there will not be post-MSN graduates to obtain terminal degrees in Nursing, such as practice and research doctorates. Not to alleviate state anxiety in order to promote the successful transitioning of RNs to ARNPs is professional suicide.

## Acknowledgement

There are no conflicts of interest to report. No grant money or funds were received for this study.

## References

1. Spielberger CD, Gorsuch RL, Lushene R, Vagg PR, Jacobs GA (1983) Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychologists Press 1983.
2. Razali NM, Wah YB (2011) Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of statistical modelling and analytics* 2: 21-33.
3. Westfall PH, Henning KSS (2013) Texts in statistical science: Understanding advanced statistical methods. Boca Raton, FL: Taylor & Francis 2013.
4. Field A (2009) Discovering statistics using SPSS. Sage Publications 2009.
5. Bates D, Mächler M, Bolker B, Walker S (2014) Fitting linear mixed-effects models using lme4. *arXiv preprint arXiv:1406.5823*.
6. Osborne J, Waters E (2002) Four assumptions of multiple regression that researchers should always test. *Practical assessment, research & evaluation* 8: 1-9.

7. Stevens JP (2009) *Applied multivariate statistics for the social sciences* (5<sup>th</sup> Edition). Mahwah, NJ: Routledge Academic 2009.
8. Cohen J (1988) *Statistical power analysis for the behavior sciences* (2<sup>nd</sup> edition). St. Paul, MN: West Publishing Company 1988.
9. Conover WJ, Iman RL (1981) Rank transformations as a bridge between parametric and nonparametric statistics. *The American Statistician* 35: 124-129.
10. Stahl AM, Lewandowski ML, Connolly MA (2008) An online dual certification program in advanced practice nursing and nursing education: One university's response to faculty shortages. *American Association of College of Nurses, Advanced Critical Care* 19: 59-65.
11. Health Resources and Services Administration (2010) *The registered nurse population: Findings from the 2008 National Sample Survey of Registered Nurses*. Washington, DC: U.S. Department of Health and Human Services 2010.
12. American Association of Colleges of Nursing (2008) *Nurse Practitioner Fact Sheet*. Washington.
13. Azimian J, Negarandeh R, Movahedi AF (2014). Factors affecting nurses' coping with transition: An exploratory qualitative study. *Global Journal of Health Science* 6: 88-95.
14. Spoelstra SL, Robbins LB (2010) A qualitative study of role transition from RN to APN. *International Journal of Nursing Education Scholarship* 7.
15. Sullivan-Bentz M, Humbert J, Cragg B, Legault F, Laflamme C, et al. (2013) *Using multivariate statistics*. Boston: Pearson Education 2013.
16. Poronsky CB (2013) Exploring the transition from registered nurse to family nurse practitioner. *Journal of Professional Nursing* 29: 350-358.
17. Wedgeworth M (2016) Anxiety and education: An examination of anxiety across a nursing program. *Journal of Nursing Education and Practice* 6.