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The Correlation Between Nursing Student Stress and Dietary Habits

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The Correlation Between Nursing Student Stress and Dietary Habits

A Senior Honors Thesis

Submitted in Partial Fulfillment of the Requirements for Graduation in the Honors College

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Introduction & Significance

Stress, defined as a state of mental or physical strain in relation to internal or external stimuli (Merriam-Webster, 2019), is a common emotion that may be taken for granted. While in small doses, stress can help propel critical thinking and enhance problem solving techniques- in excessive doses, however, stress is detrimental to general health. According to the Centre for Studies on Human Stress (2017), there are two significant forms of stress: Acute and Chronic. While acute, “short-term” stress is more likely to enhance reaction time and capabilities overall, chronic stress is notably longer-term and more consistently leads to co-morbidities, such as high blood pressure, heart disease, diabetes and depression or anxiety (Centre for Studies on Human Stress, 2017). While chronic stress has been seen to cause more enduring health-issues, acute stress too has been seen to have negative effects on health, including diarrhea or constipation, headaches, fatigue, upset stomach and weight loss or gain (Centre for Studies on Human Stress, 2017).

While every age group experiences stress in some manner, Millennials, or the younger adult population (ages 18-33) have been noted to experience higher levels of stress than all other age groups (American Psychological Association, 2019a). Furthermore, Millennials are also most likely to engage in unhealthy behaviors due to stress and ongoing symptoms associated with high amounts of stress (American Psychological Association, 2019a). Moving forward with young adult stress, academic stress is the most commonly reported source of stress in this age group, noted by 83% of young adults (Smith, 2019). The major causes for this universal feeling of academic stress in the young adult demographic seems to occur from pressure to remain in high academic standing to impress their parents and keep up with their classmates, and the feeling of being overwhelmed by course content (Smith, 2019). Along with young adults being

considered one of the highest stress demographics, healthcare professionals have been noted to be the highest stressed professionals in the nation. A recent study reported that 69% of healthcare workers reported to be stressed, with 17% reporting to feel “highly stressed” (Advisory Board, 2014). Multiple studies have come to explain the “intense stress felt by healthcare professionals to be due to time-constraints, large workloads and the uncertainty of treatment procedures regarding the best options for patient care” (Campagna, Coppola, Finco, Galletta & Portoghese, 2014, pg. 152). As stress is a huge factor in the role of all healthcare workers, it can be argued that “nurses face the most stress in their profession due to the range of roles and the role duality nurses experience, as they are not only the last line of defense in medication administration, but are also in most contact with patients and play an undeniably drastic role in the quality of patient outcomes” (Goudarzi, Najimi & Sharifirad, 2012, pg. 303).

Being in both demographics of significantly high stress including young adult age and healthcare profession, nursing students find themselves facing high amounts of stress on a regular basis. Students report their stress to “emerge from lack of professional knowledge, intense course workloads and assignments both in class and the clinical setting” (Bankert, Grust, Joseph & Del Prato, 2011, pg. 110). In terms of nursing student stress and the clinical setting, studies show the importance of “student’s having a somewhat adaption period as they switch from floor to floor and become aware of their daily patient assignment and required nursing interventions” (Bankert, Grust, Joseph & Del Prato, 2011, pg. 110). The “balance between clinical and completion of course work and assignments and available leisure time has also been noted to have a detrimental effect on nursing students, being reported as a top stressor amongst a high majority of students” (Baba, Gomathi & Jasmindebora, 2017, pg. 108). Along with this, nursing students have claimed that hostile relationships with nursing professors have caused

notable stress levels. Through this relationship, the “major source of stress and anxiety comes from direct observation and consistent critiquing of nursing students attempting to complete assessment and interventions in the clinical setting” (Bankert, Grust, Joseph & Del Prato, 2011, pg. 110). In relation to these common stressors faced by nursing students, numerous negative effects have occurred in nursing student overall health. In fact, it was noted that general long-term stress experienced by nursing students can manifest in the form of “memory problems and inability to concentrate, chest pain, continued stomachaches, depression and altered nutritional habits” (Baba, Gomathi & Jasmindebora, 2017, pg. 108). This continued exacerbated stress response has also been seen to cause anxiety and difficulty falling asleep- effecting major aspects of daily life (Segal, J., Segal, R., Smith, & Robinson, 2019). Even more shocking, however, is the fact that many nursing students actually claim to not experience any stress related health problems, as indicated by Behere’s research study examining the relationship between stress in nursing, medical and engineering students (Behere, Behere & Yadav, 2011), which is prime evidence of lack of self-care practices in regards to increased levels of stress.

In comparison to most other undergraduate majors, nursing is generally regarded to be especially rigorous and mentally capacitating. While it is inevitable that nursing school should be challenging as students graduating with nursing degrees are entered into a workforce where the margin of error is undoubtedly slim, it can still be argued that many nursing programs are even more stringent than they need to be. Multiple studies have cited nursing students explaining the pressure of their nursing program to cause feelings of insecurity and inability to perform adequate nursing care due to futile relationships with professors or poor exam scores diminishing self-confidence. According to a recent research article, negative student-instructor relationships were said to occur in 45% of junior nursing students, causing notable stress and even feelings of

incompetence in their abilities as both students and clinically practicing nurses (Bankert, Grust, Joseph & Del Prato, 2011). Another research study revealed that 84% of surveyed nursing students agreed that “lack of expected career advancement,” and “fear of future,” create immense stress (Inayat & Parveen, 2017, pg. 2). Through bouncing back from tumultuous and extensive classes delving in to necessary nursing interventions and precautions to hospital clinical experiences where nursing students intervene in care alongside registered professionals, the workload of nursing students compared to students of other majors is unparalleled. According to (Labrague, 2013), “the practical components of the program which is important in preparing students to develop into professional nurse role by its nature have made the program even more stressful than other programs” (Labrague, 2013, pg. 425). Let alone the fact that nursing program courses such as med-surg and critical care are difficult in content, the added factor of long clinical days- though clearly necessary, is a huge addition to the nursing students’ already stressful workload. In a field of work where stress is an everyday encounter, stress in nursing school should be considered a precursor for what students will eventually be faced with on a continuous basis working as a registered nurse. In terms of the immense stress nursing student’s report to experience, however, there are major concerns of how stressed students really are, and how students cope with this stress.

As a current nursing student, the writer found it notable how much of an adjustment needed to be made upon entering a nursing program compared to previous schooling when enrolled in prerequisite courses. While the courses needed in order to even apply to nursing programs themselves are challenging in content, adding the clinical factor is a notable difficulty. Bankert’s 2011 research study explains how meeting conflicting demands, along with feeling overworked from the addition of clinical to course work was a major stressor noted by nursing

students (Bankert, Del Prato, Grust & Joseph, 2011). Encountered with the stress involved with balancing time for course content and clinical hours, nursing students have very minimal time for rest or leisure activities. Defined as freedom from the demands of work or duty (Dictionary.com, 2019), leisure activities are a notably important part of maintaining physical wellness. As leisure activities have been noted to decrease stress and depression (Stevens, 2014), nursing student lack of such activities is concerning. Furthermore, nursing students from Brazil stated that lack of time to perform leisure activities was among their top stressor associated with nursing school (Batista et al, 2015). The above-mentioned nursing students are clearly not alone in this feeling, as a recent study showed regards to the “inability of nursing students to balance study and leisure time as one of the greatest academic stressors faced by this demographic” (Baba, Gomathi & Jasmindebora, 2017, pg. 108). While there is an appreciation for the stressful experiences nursing students have encountered in nursing school in hindsight, the stress at the moment very likely was detrimental to many students.

Along with the decreased leisure time and the negative effects that come with it associated with stress in nursing school, there has too been skepticism regarding nursing student stress and dietary habits as well. According to a 2014 research study, it was noted that a large majority of students have claimed to have previously skipped a meal due to stress from nursing program course load and clinical experiences (Dousis, Evagelou, Koutelekos, Kyritsi, Polikandrioti & Vlachou, 2014). This is clearly an issue among nursing students, as the fact that immense stress is causing significant decreases in nutritional intake is disastrous to health. This issue of skipping meals may be more of a pressing matter than it seems, as nursing students clearly are not the only college students with inadequate dietary intake. While there has been widely reported data suggesting college students indeed are participating in unhealthy dietary

behaviors like meal skipping (El-Kassas & Ziade, 2016), little data exists regarding these habits in nursing students- most likely due to the perception that healthcare professionals tend to live healthier lifestyles than their non-healthcare counterparts. On the other side of the spectrum, minimal data also was noted on the correlation between nursing student stress and consumption of unhealthy foods and or weight gain. Though, one 2014 research study examining nursing student stress and diet indicated that while some nursing students weren't necessarily eating more, and perhaps too were missing meals due to significant stress, a notable majority of "students admitted to eating unhealthy foods that were high in calories during high levels of stress; specifically foods they claimed to avoid when not under substantial stress" (Abd el Aziz, Sharkawy & Yousef, 2014, pg. 48). While further data is certainly needed to further back the claim that nursing student stress is causing inadequate nutritional intake, currently available research on the subject has built the foundation to support such a theory.

Significance

While the effect of stress on the nursing profession is well-documented, the same cannot be said about the stress of nursing students. With limited available literature examining the stress of nursing students in relation to nutrition or coping skills, it is extremely important to put more of an emphasis on this data as students who are notably stressed during schooling will most likely have a harder time transitioning into the nursing field after graduation. According to a 2014 study, "more than 50% of students reported feeling more than the average amount of stress in the previous 12 months" (Abd el Aziz, Sharkawy & Yousef, 2014, pg. 48). With this 50% including students of every major, those in nursing programs can be considered to be even higher- a scarier thought as this demographic has not been studied as intensely as needed. In addition to the previously touched on effects of high stress in student nurses like depression,

anxiety, memory impairment and even chest and stomach pains- and potential coping habits for this stress like the consumption of fatty and un-nutritious foods, stress in this population can result in an even more severe health problem in an attempt to cope- the abuse of illicit substances or alcohol. Though limited research is available regarding the use of substances in student nurses due to the possible disciplinary action regarding the admittance of such abuse, a recent study determined “24% of nursing students reported to use any illicit substance, and 84% reported to consume alcohol” (Holtzclaw Williams, Nair, Nemeth, Newman & Sommers, 2015, pg. 86). While also putting into consideration that these results may not be as abundant as they currently are now with the high spike in college drinking over the past several years, the data reported is significant in showing the potential for alcohol and substance abuse in the student nurse population. The subject of nursing is so demanding that such intense levels of stress have led a substantial percentage of students to resort to drugs and alcohol, a worrisome sign of probable lack of coping skills in this population.

In regards to diet in relation to stress, with discoveries of student nurses eating poor and inadequate diets noted through the limited research currently available on the topic, it should be considered a priority to examine the correlation between the student nurse stress level and nutritional intake to further back these results. If nursing students themselves are not living healthy lifestyles and are over-stressed, then the quality of care given to the patients of these students may not be up to par- showing how detrimental this stress is not only to students, but potentially to patients as well. In relation to the nurse’s role in nutrition, since it is the nurse who is making majority of contact and assessment with the patient, it is necessary for the nurse to be able to explain the importance of adequate nutritional intake for the recovery of any illness (Arkansas State University, 2016). Saying this, the purpose of this research is to examine the

correlation between nursing student stress and dietary habits. Among the realization that nursing students have had difficulties in managing adequate nutrition, defined as “well balanced diet combined with regular physical activity” (World Health Organization, 2017), the researcher questioned the further effects such intense stress had on nursing student health overall, and how nursing students dealt with such stress. By asking nursing students from a four-year liberal arts college in Western New York how much time they typically spend on nursing work and their typical dietary habits including meals eaten per day and the food group constituting most of those meals through survey questions of similar nature as: What is the usual daily nutritional intake among nursing students?, What is the usual daily/weekly alcohol intake among nursing students?, and Are there any differences between the nutritional or alcohol intake habits between junior and senior nursing students?, the researcher felt to have gotten a better picture of the effect stress has on nursing student overall health.

Background

Stress

Though highly subjective, the term stress, according to the American Institute of Stress, is defined as “the nonspecific response to the body to any demands of change,” (2018). This change can cause 2 types of stress: acute or chronic stress. According to the American Psychological Association, the most common form of stress is acute stress, which comes from stressors from both recent and future expenditures (Mayo Clinic, 2019a). While short stints of acute stress, within the right context, can be exciting and beneficial for the body, too much short-term stress can lead to headaches, stomachaches and anxiety (Mayo Clinic 2019a). Further damage presented by prolonged acute stress can include symptoms severe as hypertension, chest pain and heart disease (Mayo Clinic, 2019b). Another form of stress, known as chronic stress, is

a repeated exposure to stimuli in which the individual feels anxious or nervous, leading to the release of cortisol over an extended period of time (Centers for Studies on Human Stress, 2017).

According to the Mayo clinic, while chronic stress can be partially caused through genetic factors, repeated exposure to stressful environmental stimuli is the leading cause of chronic stress (Mayo Clinic, 2019a). When stress becomes so consistent in an individual's everyday life, chronic stress may lead to alcohol or substance abuse in attempts to cope with stress which feels never-ending. In an effort to examine this relation between chronic stress and alcohol and substance abuse, a 2008 study noted increased cumulative stressful experiences are notably predictive of alcohol or drug dependence (Sinah, 2017).

While it may seem difficult for those with chronic, or even frequent acute stress to handle their stress in a somewhat positive manner, it is important to realize that there are many methods to relieve such significant stress. One of the most successful routes to dealing with stress is exercise, or physical activity. Along with increasing the release of the neurotransmitter dopamine and other endorphins, exercise also increases self-confidence and mood overall (Stress in America, 2014). In addition to this increase in "feel-good" neurotransmitters, exercises reduces levels of stress hormones in the body, notably those of adrenaline and cortisol (Harvard.edu, Exercising to relax, 2019). While physical activity has clearly shown positive outcomes in decreasing stress levels, so too have relaxation techniques, such as yoga. Through the combination of both physical fitness and a philosophical increase of self-awareness, yoga has been seen to significantly decrease stress in all age groups. In fact, according to a 2012 National Health Interview Study, 86% of individuals who practice yoga claim that it reduces stress (Barnes, Black, Clark, Stussman, Nahin, 2018). Through the use of relaxation and exercise

regimens, stress can be effectively controlled, preventing the health risks such as anxiety, depression, chest pain and substance abuse chronic stress has shown in individuals.

Stress in College Students

There is no question that stress in the college student population is a current major health issue. According to the Center of Collegiate Mental Health (CCMH), 30% of the college student population needed to seek counseling due to significant stress (CCMH, 2016). Along with this, it was also reported that 53% of college students were so stressed that they did not want to associate with peers (MtvU & Associated press, 2009). Putting into context these statistics, the major problem, let alone the fact that college students are at an all-time level of stressed, is the fact that students are not coping with stress until they are so stressed that they need professional counseling. With this being said, college students seem not to be partaking in stress maintenance practices such as exercise and yoga, activities known to decrease stress level in all age groups. Rather, these students bottle up stress to the point where they seek medical attention to help cope with it, a serious sign of potential development of chronic stress. Along with stress-maintenance mechanisms such as the above spoken techniques of exercise or relaxation therapy, surrounding yourself with peers, too, has been shown to decrease stress levels (Mayo Clinic, 2019b). It is important to emphasize the need to practice these stress relieving methods before stress becomes severe, something many college students are currently not consciously aware of.

In continuation with the manifestations of long-term untreated stress, stress-related conditions- notably that of anxiety, have been seen to increase as of late in the college student population. In fact, according to the American College Health Association (ACHS), 1 in 6 college students have been treated for, or currently are diagnosed with anxiety (ACHA, 2017). This same survey discovered that 25.1% of college students claimed their anxiety actually led to

decreased academic performance (ACHA, 2017). With these statistics representing the overall population of college students, it can easily be argued that the stress and anxiety levels of students in more grueling or cognitively difficult majors, such as healthcare majors which require extensive coursework in sciences, would be an even more significant. With science courses such as microbiology, anatomy and physiology, and chemistry being among the main prerequisites for most healthcare majors, it is no question that stress is notable in this college student population. In reference to a 2016 study examining the correlation between college student major and perceived stress level, it was noted that nursing students had the second highest stress levels, behind only computer science and engineering majors (Andrews, Robinson & Yoder, 2016), confirming the above statement regarding stress in healthcare majors.

Stress in Nurses

Unlike that on nursing student stress level and impact of such stress, there is copious research on the topic of Registered Nurse stress levels. Nursing stress has been seen to become so significant that at a certain point, stress progresses to “burnout” a term used in the nursing field to signify physical, mental and emotional exhaustion. Nurse burnout, and its relation to stress is put together nicely by Erickson “While stress is defined by over-engagement, burnout is defined by disengagement” (Erickson, 2018, pg. 1). This perceived “burnout” by nurses is not only dangerous on behalf of nurses, but also for the patients these nurses are taking care of, as these nurses may not pay as close attention to care as need be, a serious problem posed by notably elevated levels of stress in the nursing profession. One notable cause for such burnout in nurses is the nurse role in general, and everything that this role entails. The role of nurses extends way further than patient care, as nurses are not only the main advocate and care taker for patients, they are also the first line of defense in preventing and reporting problems or

complications that are to occur in patients. It is the nurses' role to contact the physician if a patient is declining or trending downward in any way, and the above listed roles, in addition to this massive role of being the first line of defense in patient care can easily result in burnout for any nurse (Becker's Hospital Review, 2013).

Another agent leading to nurse burnout throughout the nation is inadequate staffing ratios, leaving nurses with a significant number of patients with varying acuity on any shift. Along with the risks posed to the nurse with too many patients to handle, a substantial risk is also unfortunately placed on each of the patients the nurse may be taking care of, a significant problem in the healthcare setting today. Furthermore, a study by Rassin & Silner expand on this statement, touching on the dangers posed by hospital understaffing and some risks posed with such a significant lack of adequate staff members. The researchers state that such high stress levels and mental exhaustion experienced by nurses due to inadequate staffing notoriously leads to a drastic decrease in quality of patient care, and a spike in nursing mistakes have also occurred, leading to medical errors and a further lack of quality care (2007). Continuing with the negative effects of inadequate nurse staffing, further nurse burnout has occurred from a relatively well-known symptom of understaffing- nurse turnover. Due to inadequate staffing placing such an increased stress and responsibility on nurses, as they have to care for significantly more patients than they would if the floor in which they worked had a sufficient number of working nurses, nurse turnover has occurred due to job satisfaction and inability to work in such conditions (Becker's Hospital Review, 2013). This turnover, originally caused by inadequate staffing, is a never-ending process as floors in where turnover is this prevalent may never be adequately staffed- leading to further nurse shortage, increased demands of nurses to care for an

increased number of patients, which leads to negative patient outcomes, and again, nurse burnout (McMullan, 2014).

Lastly, while it is evident that nurse burnout can be caused by external stimuli, as the nursing environment can be notably trying at times, it is also important to touch on the fact that nurse burnout can be very much internal as well. One manifestation of such internal nurse burnout is the general “type A” personality possessed by most healthcare professionals, and most nurses in particular. Simply defined, individuals with “type A” personality “tend to be very competitive and self-critical... Type A personalities experience a constant sense of urgency: Type A people seem to be in a constant struggle against the clock.” (McLeod, 2017). With a high sense of urgency being a personality staple in type A personalities, it is evident that these individuals need to be in control at all times. The need to be in control is also a personality trait seen in most nurses, commonly known as the trait of “hardiness” as evidenced by Curtis, Kennedy and Waters’s research study (2014). The researchers explain “Hardiness is comprised of three personality dimensions: commitment, control and challenge” and later expand on this statement claiming that nurse’s hardiness is what allows them to adequately work in stressful environments (Curtis, Kennedy, Waters, 2014). Furthermore, while hardiness does indeed allow nurses to properly work under stressful conditions, it also puts them at risk for burnout (Day, Gilin, Leiter, Spence-Laschinger, 2009). Maintaining such a consistent need for control and constantly criticizing their mistakes due to their self-criticizing personalities, it is no wonder that nurses eventually become burned out. With the addition of the internal factor of a type A personality to the already significant external environment of working in the hospital, there is no question that this burden can easily lead to burnout in nurses.

Nursing Education

There are several articles that do a good job in highlighting the intertwining aspects of nursing school, including the academic side along with the clinical rotation associated with the nursing student curriculum. Substantial research has made note of the fact that majority of nursing student stress may in fact come from clinical rotations involved in the nursing students educational experience. Aside from the fact that the additional clinical rotation in addition to copious course work is a stressor in of itself in nursing students, the inherited expectations held by clinical preceptors of nursing student knowledge has caused significant stress in nursing students (Bankert, Grust, Joseph & Del Prato, 2011). Let alone the associated stress increased expectations may arouse, it was also evident that factors many may not initially consider, like the fact that the constant changing of clinical settings from hospital to hospital, and floor to floor, caused stress in nursing students as they continuously had to adjust to new floor-specific policies and procedures (Bankert, Grust, Joseph & Del Prato, 2011).

Expanding on the necessity of a clinical rotation along with the adequate educational course load nursing students are presented with throughout nursing school, a 2014 qualitative study conducted on 40 nursing students and 8 instructors shed light on the complications associated with clinical evaluation. The researcher essentially backs the clinical experience as a necessary part of the nursing student curriculum, deeming nursing education as an involvement of both theoretical and practical practice (Kojuri, Moattari, Mousavinaseb, Nikbahkt, & Rafiee, 2014). While nursing school entails both classroom and clinical settings, the researcher further states that it is the clinical setting where the nursing student fully develops their skills and applies the knowledge they learn, and the relevance of what they are learning to their future practice. The researcher states “it is in the clinical area that students must relate theory to practice, learn the necessary technical and interpersonal skills, make clinical judgments, become socialized into

the profession, and begin to appreciate its values and ethics” (Kojuri, Moattari, Mousavinaseb, Nikbahkt, & Rafiee, 2014, pg. 2), in an attempt to solidify the claim that it is in the hospital setting itself that nursing students develop the necessary skills needed to practice in the real world.

In terms of the classroom aspect of nursing education, while the majority of nursing school education occurs in the lecture setting, a paradigm shift is currently underway in an attempt to provide students with more clinical experience and less in-classroom lectures. While there are many growing pains associated with the switch in curriculum, nurse educators believe that a tactic known as “flipping the classroom” – which has been implemented in several southern United States nursing schools, will lead to more active learning in nursing students. This term “flipping the classroom,” according to a 2015 research study, is in basic terms the process of sending online lectures to students to do at home before class, while class time will be further used as innovative case-study type learning experiences, aimed to engage students in learning new material through clinically based concepts and methods of patient care (Deal, Hermanns, Post, 2015). Researchers Deal, Hermanns and Post further analyzed this classroom switch in terms of perceived effectiveness in both educators and students. Unfortunately, researchers determined that the change of curriculum lead to student frustration due to additional time requirements from added element of viewing the online lectures at home (Deal, Hermanns & Post, 2015). While the idea of such a paradigm switch in the current in-class curriculum of nursing education was deemed unsuccessful in this particular study, further innovation of the idea can potentially enhance absorption of information in the classroom setting, and lead to better student outcomes in both the classroom and hospital settings.

Stress in Nursing School

As extensive research does indeed exist regarding the stress and effects of such stress on Registered Nurses who are legally practicing, limited research exists regarding the student nurse population and their response to stress. However, there is notable existing research examining nursing students and overall stress levels. One study notable for pointing out common stressors in nursing students is a quantitative descriptive cross-sectional research study conducted by Inayaat and Parveen. The study makes it more than apparent that the leading stressor in nursing students is indeed academic stressors-such as receiving a worse grade than they anticipated, as 52% of the 150 survey participants reported experiencing academic stress (Inayaat & Parveen, 2017). Further stressors reported by the surveyed population included fear of failure and doubt about future success, anxiety and nervousness regarding lack of knowledge or practice completing tasks and notably, a decrease in leisure time due to excessive work load (Inayaat & Parveen, 2017). Interestingly, this study also reported that the lack of leisure time was a predominant stressor in nursing students, as did Bevilaqua's study regarding the decrease in leisure time and the effect it had on nursing student's stress level in nursing students from Brazil (Bevilaqua et al, 2015).

Continuing with Bevilaqua's study, researchers conducted a cross-sectional study on a population of 111 nursing students in Brazil in an attempt to analyze stress levels (Bevilaqua et al, 2015). Researchers made it apparent that they attempted to highlight the relationship between stress and the correlation that may exist with time management difficulties among the surveyed population (Bevilaqua et al, 2015). With most studies having conducted research on stress itself in the population of nursing students, Bevilaqua and the rest of the research team focusing on specifically time management and its relationship to stress in this particular population allowed researchers to reach conclusions that have not yet been made, based on this underlying factor of

leisure time limitation in nursing students. Through the use of a survey inquiring about sociodemographic questions like performance of practical activities, time management skills and professional training in relationship to their theoretical thinking abilities, the research team was able to reach the verdict that time management issues were the leading stressor in this population of nursing students (Bevilaqua et al, 2015). Expanding on this issue of time management in relation to stress, researchers noted that the second year students had the highest level of stress related to time management, specifically pointing out “little rest time; little leisure; reduced time to spend with family members; and for completion of extracurricular activities” (Bevilaqua et al, 2015, pg. 521) to be the most significant stressors. Lastly, the researchers went on to further explain the physical effects the limited leisure time allocated by this population of nursing students can potentially have. The authors move on to reference a 2014 study- in which it was determined that stress was significantly decreased in nursing students after weekly yoga classes (Kim, 2014), to further their point that leisure time needs to be more abundant for nursing students to relieve stress so “the academic life does not become a factor opposed to the quality of life of the individuals” (Bevilaqua et al, 2015, pg. 524).

In continuation with the physical and mental health effects severe stress may have on nursing students, more of an emphasis is placed on analyzing this relationship in Baba, Gomathi and Jasmindebora’s study on the impact of stress on nursing students. After introducing the common stressors of nursing students- similar to those touched on in the previously spoken articles such as change in environment, lack of social or leisure time and the fear of making a mistake in the clinical setting, researchers transition to the effects this stress has on nursing students. The researchers broke down the effects stress has on nursing students into several categories: physical, thoughts, behaviors and feelings (Baba, Gomathi & Jasmindebora, 2017).

While physical manifestations of stress in nursing students are vaguely spoken about in most other research articles, the researchers discovered notable physical symptoms in this population, such as a bounding pulse, an elevated blood pressure, chest pain and tightness, abdominal cramps and nausea, and increased susceptibility to illness (Baba, Gomathi & Jasmindebora, 2017). While relatively vague, these symptoms can lead to further, more severe health problems if they were to occur for an extended period of time. With discovered feelings and thoughts of this population due to stress including lack of confidence, decreased self-esteem and irritability and anxiousness (Baba, Gomathi & Jasmindebora, 2017), factors commonly spoken about in previously discussed research- more severe manifestations were noted under the behaviors category. Most notably, researchers discovered nursing students experience changes in dietary habits, such as under-eating over-eating, and become more susceptible to drug and alcohol use when severely stressed (Baba, Gomathi & Jasmindebora, 2017).

Study Purpose and Research Questions Reiterated

Through the use of a quantitative cross-sectional research study, the researcher aims to discover if a correlation exists between nursing student stress level and dietary habits. Through the use of the above referenced research, the writer feels to have built a strong foundation regarding what is currently known about the subject of nursing student stress levels, though aims to build on top of that foundation to delve deeper into the topic that currently has several holes in current research. Through first examining current stress levels in nursing students of a four-year liberal arts college in Western New York, the writer attempted to analyze whether the stress level in this population of students has a relationship to some of the manifestations of stress touched on briefly in previous research- notably Baba, Gomathi and Jasmindebora's 2017 study-

specifically analyzing the changes in dietary habits or increase or decrease in weight, and the use of illicit substances or alcohol in an attempt to cope with this stress.

Through the use of questions like: What is the usual daily nutritional intake among nursing students?, What is the usual daily/weekly alcohol intake among nursing students?, and Are there any differences between the nutritional or alcohol intake habits between junior and senior nursing students?, the researcher set out to paint a better picture of the effect stress has on nursing student overall health. In delving into such questions, the researcher feels that further evaluation of nursing student stress and the actual causes of this stress can be further explained. While notable research, specifically those studies touched on previously in this chapter, have shown the overall stress level of nursing students from all over the world has been relatively high, in answering the questions of the true manifestations this stress brings about in this population, the researcher feels it will be more plausible to specifically target this stress, and potentially lower this stress in the nursing student population overall.

Methods

A 10-question quantitative survey was administered to both junior and senior nursing students from a Western New York four-year school in an attempt to determine the correlation between nursing student stress and dietary habits. Upon realization that many nursing students have difficulties in managing healthy lifestyles, and diets in particular due to excess amounts of stress, the researcher's use of a quantitative survey was used to further investigate the above correlation.

Research Design

The research design used was a cross-sectional descriptive correlational survey study. The researcher determined this study was the best to use given the purpose of the research was to determine if a correlation existed between nursing student stress levels and dietary habits. Perks of the cross-sectional descriptive correlational study include the convenience of the survey for both the researcher and those completing the survey, and the fact that it allows for timely surveying of a large population.

Data Collection

Prior to data collection, IRB approval was granted stating that the intended research was plausible and significant in the realm of nursing- specifically that of nursing students. For reference to this document, please see Appendix A. Data was collected through a one-time administration of an in-person survey to 1 class for both the junior and senior nursing classes. The senior nursing student class was surveyed in October of 2018, while the junior nursing students were surveyed in November, 2018. All eligible students were present during the administration of the survey in both of these populations. Inclusion criteria of the surveyed population included male and female nursing students aged 19-29 from the Western New York schools nursing program. Exclusion criteria included any student who is not in the Western New York schools nursing program. Before administration of the survey, the researcher made clear that the completion of the survey was absolutely optional and voluntary, all data will remain confidential and for the researcher's eyes only, and surveys will be properly and safely stored in the researcher's on-campus residence-where only the researcher had access to. The researcher also made evident that surveys will be disposed of after data collection through the use of a paper shredder. Implied consent was granted for those who completed the survey after the researcher explained the use of the survey being to determine any correlation between nursing student stress

and dietary habits. The researcher explained that students taking the survey can skip any question of the survey they felt they did not want to answer. Survey administration lasted 5 minutes for both the junior and senior nursing classes. Attached is the above referenced survey:

(Document 1)

Survey Questions

- 1. Please state your gender: Male? Female? Rather not say.
- 2. Please state your age:
- 3. Past and current weight?
- 3 a. Would you say you gained, lost, or remained the same weight since beginning the nursing program?
- 4. What food group makes up majority of your meals?
- 5. How many meals do you eat a day?
- 6. How many hours a day do you spend on nursing work (assignments and clinical)?
- 7. On a scale of 0-5 (0 least, 5 the most) how stressed would you consider yourself?
- 8. Have you ever skipped a meal due to an excess of work/clinical hours?
- 9. Have you ever used a controlled substance to cope with this stress?
- 10. Have you ever replaced a meal with alcohol?

Data Analysis

In order to analyze the data, the researcher examined the survey results by the use of a tally system. The survey was broken up into categories including: Gender, Age, Weight, Weight gain/loss, Meals eaten per day, Food group making up most meals eaten, Hours of work done per day, Stress level (rated 0-5), Whether the student has skipped a meal due to excess work, and whether or not the student used drugs or alcohol to cope with nursing school stress. Data was then extracted and analyzed using descriptive statistics including frequency counts, percentages, and determining the mean of each above listed category. The researcher began with first breaking the sample into demographics of age and gender. Next, data was collected for student weights, and those who gained, lost or remained the same weight during their time in the nursing program- and how much weight they gained or lost if applicable. Samples were then examined for how much meals were typically eaten a day by those being surveyed, and the most predominant food group in that students diet. Next, the average amount of hours spent on work per day was examined along with the relative stress nursing students feel due to this workload. Lastly, the matter of whether or not students used illicit substances to cope with this stress was also examined and properly recorded.

Results

Total Sample

Weight

A total of 142 nursing students were surveyed with females aged 20-21 being the largest population in the demographic. Out of the total population, 129 of the 142 students surveyed were female. 120 of the 142 students surveyed were aged 20-21, with the range of the ages being 19-29. Weight of those surveyed varied from 100-274 pounds. 55 surveyors claimed to have

gained weight during their time in the nursing program. Weight gains had ranged from 2-50 pounds, with an average weight gain being 12.7 pounds. 33 students out of the 142 surveyed claimed to have lost weight, with weight losses ranging from 2-30 pounds. The average amount of weight loss was 10.43 pounds. 54 students reported to have remained the same weight throughout their tenor in the nursing program. There were no difference in weight gain or loss between male or female nursing students.

Nutrition

In terms of meal skipping, while meals a day ranged from 1-5 meals, only 61 out of the 142 student's surveyed claim to eat 3 meals a day, with the majority (68) eating only 2 meals a day. 113 out of 142 students claimed that they have skipped meals due to excess work or clinical hours. 31 students reported to have skipped a meal with alcohol during their time in the nursing program. 86 students stated that their diet was made up of primarily carbohydrates while 8 students (7 of which were junior nursing students) state to eat mostly fast food.

Stress

In an attempt to examine the stress level of nursing students, the researcher felt it was necessary to ask about the total amount of hours (course work and clinical) spent on nursing work daily. With a range of 2-20 hours per day, 56 of the 142 students surveyed stated working 4-5 hours a day. Along with this, 21 students reported working 6 hours per day, 15 worked 7 hours, 16 worked 8 and 5 claimed to work 9 hours/day. 7 students reported to work at least 10 hours a day, all of whom were senior nursing students. That being said, out of the 142 nursing students surveyed, 120 students reported to work at least 4 hours/day (84.5% of the population). In examining the stress level of nursing students, the researcher asked for stress level on a 0-5

scale, with 0 being no stress and 5 being the most stress they have ever experienced. On that scale, 130/142 students reported their stress level to be at least a 3/5. 35 students reported a stress of 3/5, 49 reported a stress 4/5 and 46 students reported their stress to be 5/5. Of these students, 38 reported to use illicit substances to help cope with the stress of nursing school.

Junior Nursing Students

Weight

Of the 142 students surveyed, 77 were junior nursing students. Age of the junior class ranged from 19-29, with the majority of 65 students aged 20-21. Of the surveyed population, 71 students were female. Weight of the junior class students ranged from 100-274 pounds. Overall, 28 junior nursing students gained weight, with an average weight gain of 10.25 pounds. On the contrary, 16 junior nursing students lost weight, with an average weight loss of 8.69 pounds. 33 students claimed to remain the same weight throughout their time in the nursing program.

Nutrition

In terms of meals eaten, only 33 out of the 77 students claim to eat 3 meals a day, while 41 students eat 2- with 1 student claiming to eat only 1 meal a day. 44 students reported that carbohydrates make up most of the contents of their diet, while 7 students claimed that fast food makes up the majority of their diet.

Stress

The junior nursing students daily time spent on nursing work had a range of 2-10 hours, with a total of 50 students working 4-6 hours a day. Even more intriguing, 24 junior students state to work at least 7 hours a day, with 2 students claiming to work a total of 10 hours/day. In

relation to these long hours spent on nursing work, junior nursing students had significantly higher stress values than the senior student population. Out of the 77 junior students surveyed, 55 of them reported to be at least a 4/5 stress level- with 22 students rating their stress at a 5/5. Furthermore, out of this high-stressed group of junior nursing students, 22 out of the 77 students surveyed reported to have used an illicit substance to help cope with the stress of nursing school (28.5%). Along with this, a total of 55 junior students claimed to have skipped a meal due to excess nursing work, while 11 students reported to have replaced a meal with alcohol at some point or another.

Senior Nursing Students

Weight

Moving along with the results of the 65 senior nursing students surveyed, the demographic consisted of 58 females and 7 males. With an age range of 20-24 years old, the majority (60 students) were aged between 21-22 years old, with 48 students being 21 years old. Weight of the senior nursing population ranged between 101-240 pounds. Out of the 65 seniors surveyed, 27 reported to have gained weight during their time in the nursing program, with an average weight gain of a whopping 14.8 pounds. In comparison, 17 students claimed to have lost weight, with an average weight loss of 10.8 pounds. The remaining 21 students had experienced no change in weight throughout their tenure in the nursing program.

Nutrition

Compared to the junior nursing students, the senior population seemed to consistently eat more effectively- with the majority of seniors (35 students) claiming to eat at least 3 meals/day. In terms of the food group making up the majority of their meals, 42 students stated carbs, 11

students stated protein and only 1 student stated that fast food made up the majority of their meals.

Stress

In relation to the junior nursing students, seniors too reported to be notably distressed. 61 of the 65 senior students surveyed reported a stress level of at least 3/5- 21 students at 3/5, 16 students at 4/5 and 24 students at a 5/5 stress level. Out of the 65 students surveyed, 16 of them report to use illicit substances to cope with the stresses faced in nursing school. In terms of meal skipping due to heavy school workloads, while 35 of the 65 students reported to eat at least 3 meals a day, 58 out of the 65 senior nursing students reported skipping a meal at least once due to heavy school workloads. Lastly, in comparison to the junior nursing class population of 11 students, 20 senior students reported having skipped a meal with alcohol at some point.

Discussion

Overall, the researcher found notable evidence suggesting a correlation between nursing student stress levels and dietary habits. To reiterate, out of the 142 nursing students surveyed, 64 students claim to work at least 6 hours a day on nursing work. In fact, 7 students claimed to work at least 10 hours a day, all of whom were senior nursing students. In relation to these notably high hours of expenditure on nursing related work, the population of surveyed nursing students was excessively stressed out. 130 out of the 142 students surveyed claimed their stress was at least a 3/5, with the majority of the surveyed population (95 students) reported a stress of at least 4/5. In regards to this noted stress and its relation to nursing student dietary habits, dietary intake was compromised as students became increasingly stressed. 113 out of the 142 students surveyed claimed to skip a meal due to excess work or clinical hours, and 31 students have stated they

have skipped a meal with alcohol at some point due to increased stress. In regards to weight gain or loss throughout their time in the nursing program, 88 students out of the 142 surveyed claimed to experience a change in weight. In fact, while 55 surveyors claimed to gain weight, with an average weight gain of 12.7 pounds, an additional 33 students claimed to lose weight, with an average weight loss of 10.43 pounds.

Dietary Habits of Nursing Students

In terms of the above referenced correlation between nursing student stress and dietary habits, it is clearly concerning the impact that stress has had on not only dietary intake- with a significant majority of the surveyed population claiming to skip meals due to excess nursing work, but also weight in nursing students. The fact that the surveyed population experienced such notable weight changes (with the senior population averaging a weight gain of 14.8 pounds), but also skipped meals due to stress was eye opening. The notable weight gain, specifically in the senior nursing student population may actually be accounted for by the consistent consumption of foods high in carbohydrates, or snack like foods notably eaten during stress eating. With 7 senior nursing students claiming to work at least 10 hours a day on nursing related coursework, it can be argued that this extensive time spent on work has decreased their ability to partake in well-balanced diets, and instead, students are eating diets composed of primarily carbohydrates. In relation to the stress eating factor that may be playing a role in senior nursing student weight gain, this would not be the first time such data has been discovered. In fact, a 2016 study examining dietary and lifestyle behaviors in health science students found just that. The researchers claim that a notable population of the surveyed students engage in unhealthy dietary habits, notably meal-skipping and binge eating junk food in students with increased stress levels (El-Kassas & Ziade, 2016).

While the above referenced study does agree with the researcher's findings, the researcher did not use the above study in the development of this study. One study that was continually referenced, however, was the study conducted by Dousis, Evagelou, Koutelekos, Kyritsi, Polikandrioti & Vlachou in 2014. As there is very limited available research regarding nursing student stress in relation to dietary habits, Dousis and the rest of the research team adequately discuss the frequent meal skipping due to inadequate meal prep time in high stressed nursing students, while also speaking on the general category of food being consumed by the majority of the surveyed population (Dousis, Evagelou, Koutelekos, Kyritsi, Polikandrioti & Vlachou, 2014). It was this study that led the researcher to question why the correlation between nursing student stress and dietary habits has not been researched more, as clearly there is some correlation that exists between the two variables.

Nursing Student Coping Mechanisms

One area of the results that stood out to the researcher was the fact that while senior nursing students were working longer hours on nursing related coursework, they were actually less stressed than the junior students claimed to be. Along with reporting lower stress levels overall than the junior class, senior nursing students also were less likely to partake in the use of illicit substances to deal with this stress than junior nursing students. That being said, there must be some sort of coping mechanism that develops while progressing throughout the strenuous process of becoming a registered nurse. Whether senior students have just learned to not worry about the little things associated with nursing school as much as juniors who are just beginning the program seem to do, or are more easily accepting of the excessive hours that need to be put in to succeed in nursing school, seniors have clearly coped with this stress more effectively than juniors based on the gathered data. Along with this perceived optimism in the senior nursing

class, the development of increased problem-solving skills also likely played a large role in allowing the senior students to more adequately cope with their stress. According to a recent study analyzing nursing student coping mechanisms, researchers noted that upper level nursing students reported to engage in a multi-step process of coping, using problem solving skills and effective communication with staff members to cope with stress (Crowell, Reeve, Riley, Shumaker & Yearwood, 2013, pg. 423). Furthermore, in terms of optimism in upper class nursing students, researchers noted “Students described a conscious decision to continue with their nursing education, using terms such as ‘sticking it out,’ ‘keeping it in perspective,’ and ‘sucking it up’” (Crowell, Reeve, Riley, Shumaker & Yearwood, 2013, pg. 423).

Continuing with the potential effective coping mechanisms in the senior nursing students, it would also be interesting to inquire whether or not senior nursing students participated in more physical activity or yoga than did the junior nursing class. As previously touched on, the effects of physical activity on stress has seen to significantly decrease stress in individuals, and perhaps the senior nursing students being more physically active can be a determining factor in asking the question of why the seniors were less stressed out despite working longer hours.

In terms of the use of illicit substances as a method to cope with stress, the decreased use of these substances in the senior class also says something about the possible development of adequate coping mechanisms as nursing student’s progress through the program. As 22 juniors compared to only 16 senior nursing students claim to partake in the use of illicit substances to deal with increased stress levels, it becomes clear that the junior class is either unaware of proper ways to cope, or have become so stressed the only way to cope is through substance use. This is an extremely slippery slope, as nursing students who use illicit substances are at a much higher

risk of continuing this substance use at they become registered nurses. According to previous research, it has become apparent that nurses who feel inadequately prepared for taking on the numerous roles the nurse has in the healthcare setting is significantly more likely to partake in substance abuse (Trinkoff & Storr, 1998), boding negatively for the above referenced population of nursing students.

Limitations and Implications

Limitations

While the researcher feels that the findings discovered in this research study will propose numerous implications in regards of how to adequately change nursing program curriculum and support systems to address the extreme stress levels of nursing students, the proposed research study does have some limitations. One limitation seen in this research includes the fact that the surveyed population was only students from one nursing school in the area of Rochester, New York. In order for more sufficient data, the researcher acknowledges that several other nursing schools from various states across the United States would pose for greater diversity in the study. Furthermore, the surveyed population was also made up of majority female nursing students aged 20-21 years old. For more convincing data, it is noted that surveying more men, as the nursing profession is trending towards seeing a spike in male nurses, along with surveying nursing students of older age would be beneficial in creating a more diverse study population. Lastly, it is also important to acknowledge the fact that stress levels of the surveyed students may have been skewed, depending on the current semester and schedule of students at the time of administration of the survey. If students were amidst test week, where they have been studying excessive hours, it is clear that they would likely be more stressed out, potentially skewing the data of relative average stress.

Implications

Stress Relief Classes

Despite the above noted limitations of this research study, the researcher's findings likely will provide insight for future studies examining the true effects of nursing student stress. Through the results of the study showing how stressed nursing students truly are, it is likely that nursing school curriculum will implement more stress relief efforts into their programs to prevent the notable stress experienced by the surveyed population. One suggested intervention to prevent notable stress in nursing students is the use of coping strategy classes in the middle of the first semester of nursing programs. The implementation of such a class will likely be more effective in the middle of the semester as nursing students will be able to hang on to this knowledge longer than if the intervention were to occur before the semester began. Furthermore, the intervention will likely have more success occurring towards the middle of the semester rather than the start of the semester due to nursing students having the ability to be exposed to the notable stressors of nursing school already. The fact that these students will already have some idea of what their leading stressor may be, as well as what will work for them in terms of coping with this stress will be beneficial as students can tailor their experiences with stress to fit their individual needs. For example, if a student notices that they are more stressed in the clinical setting rather than the academic setting, they can spend more time at these coping strategy sessions discussing with licensed professionals about ways to adequately work as a registered nurse, and how to deal with the inevitable stress such title includes, rather than spending time learning test tasking strategies.

Clinical Practice

Moving forward with nursing student stress in the clinical setting, it is extremely important to offer nursing students outlets to resources that can potentially ease the transition of entering the hospital setting. Along with the above-mentioned coping strategy classes, it could be beneficial to provide nursing students with a pen-pal type resource of a practicing registered nurse, whom the student can ask questions that they may be hesitant in asking their professors or clinical preceptors about. While nursing students have notably felt uneasy about their level of knowledge in the clinical setting, and have also claimed to be afraid to ask questions they feel they should already know, the additional resource of a registered nurse pen-pal could potentially ease some of this stress. Students will likely feel less hesitant in asking this resource questions they feel they should know, notably because this resource will not be involved in grading or rating their performance at all, but will strictly be used as a positive source of information. This additional resource will not only aid students in questions they may have regarding clinical practice, but will also serve as an emotional support for nursing students. Having an additional resource will likely reduce stress while also enabling students to have an outlet for questions or concerns they may feel uncomfortable asking professors or preceptors, decreasing nursing student stress while also enhancing learning in the clinical setting.

Nursing Education

Furthermore, it is also important to include interventions for decreasing nursing student stress in the classroom as well as the clinical setting. The intervention proposed by Deal, Hermanns, and Post's 2015 research study regarding the "flipping the classroom" tactic in nursing schools could be a potential answer for improving the nursing classroom curriculum. To reiterate, what is meant by the "flipping the classroom" intervention is sending nursing students lectures to view at home before class, while class time will be used as more of a case-study

learning experience, to more adequately prepare nursing students for the clinical setting. Due to the knowledge that the clinical setting is a known cause of nursing student stress, the use of such an intervention will likely call for nursing students to feel more comfortable in the clinical setting, as this curriculum will allow for more practice in how to engage various situations that students will likely encounter in the hospital setting. While the original intervention was not effective due to nursing students claiming that the increased workload of viewing these lectures at home caused increased stress (Deal, Hermanns & Post, 2015), some minor changes to the curriculum may lead to a more positive outcome. With that being said, perhaps using a small portion of class to review lecture material- cutting down the lecture time that needs to be viewed out of class, can lead to a system where the majority of class time is spent on case-studies and proper interventions, while the use of minimal in class time of reviewing lectures can support a happy medium where students are not overwhelmed with out of class work.

Policy Changes

As previously discussed, it is quite typical for nurses- and nursing students for that matter- to be type A personality individuals, placing a lot of additional individual stress on top of the environmental stress that comes along with nursing. With notable previous research touching on the topic of nurse personalities and the contribution such personalities may have on stress levels, perhaps a change in policy of nursing school such as placing an increased emphasis on individual personality can be beneficial in helping to develop the most successful future nurses. While nursing school candidates are mostly chosen by GPA, many factors that lead to increased stress like individual stress and anxiety levels are not assessed in the nursing school selection process. Along with factors such as stress and anxiety levels, the assessment of coping abilities of potential candidates for nursing school can be beneficial as this will allow staff members to

truly determine the future nurse's effectiveness as a nurse in the inevitable stressful environment of whatever healthcare setting the nurse will work. Due to the nursing profession having significant environmental factors causing stress in nurses, perhaps a policy change in the nursing school selection process of placing more of an emphasis on individual characteristics rather than solely GPA will allow for a decrease in nurses with type A personalities that may be predisposed to increased stress levels and quicker burnout. When discussing the complications associated with increased stress in the nursing profession- such as the increased incidence of medication errors and inadequate communication between healthcare workers associated with increased stress, the assessment of the factors of individual stress, anxiety and coping skills in nursing school applicants will likely lead to a decrease in the above referenced associated complications.

Further Research

The researcher believes the research to have notable implications in future research, most specifically in the development of randomized control trials assessing the effectiveness of some of the stress relieving interventions previously touched on. In terms of stress relief effectiveness, it is important to determine which of the above referenced interventions; whether it is increased physical activity or enhanced student nurse accessibility to support systems such as registered nurse pen-pals- have the greatest effect on not only decreasing stress in the nursing student population, but also better allow these students to cope with this stress. Based on the findings of this future research, nursing school staff will need to incorporate these interventions that have shown to lead to positive outcomes such as decreased stress into their curriculum. Whether through stress relief seminar opportunities or the development of a physical fitness class in the nursing curriculum to decrease nursing student stress, it is the future research that delves into the

most effective interventions in handling nursing student stress that will ultimately lead to the positive outcome of decreased stress levels.

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