SERVING STRESS:

IMPACT OF STRESS IN NURSING STUDENTS

A STRESS MANAGEMENT DATA ANALYSIS

by

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HONORS THESIS

Submitted to Texas State University
in partial fulfillment
of the requirements for
graduation in the Honors College
December 2022

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2022

ACKNOWLEDGEMENTS

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ABSTRACT

Nursing has become known as a profession with one of the highest levels of stress, leading to a rippling effect in the community and in nurses' lives. Stress is a natural part of human nature and is essential for humans to survive and thrive. With the hustle-oriented, high-pressure, society that America embraces today, stress levels have reached notoriously elevated levels that sometimes cannot be avoided. Mental strain and stress play a significant role in the development of physical ailments that only continue to rise in Western Society today like heart disease, ulcers, and a compromised immune system (AHA, 2022).

How a healthcare professional responds to stress not only impacts their quality of life, but also their quality of work and patient care. When it comes to work ethic and stress management, professionals often begin to derive the habits used throughout their careers starting as a student in school. This thesis raises the question of which, if any, type of stress management mechanism is perceived to be the most effective by senior nursing students at the St. David's School of Nursing. A curated research survey based on the Perceived Stress Scale (PSS) and Individual Stress Theory (IST) used to collect information regarding students' perceived stress levels, the most frequently used stress management mechanisms, and the perceived most effective stress management mechanisms is presented and analyzed in this thesis.

INTRODUCTION

What is stress?

Stress can be defined as the body's response to physical or mental pressure and is mediated via communications between neuropeptide systems in the brain and other regions of the body (Kling and Landgraf, 2014). Stress is a natural part of human nature and is beneficial to our bodies during acute events like having a baby, or the excitement felt when on a roller coaster. Without stress to activate our fight-or flight system (sympathetic nervous system or SNS), we wouldn't be able to react quickly in times of danger or be able to perform well during important milestones in our lives. Stress enables individuals to survive and thrive. When experiencing a repeated stress chronically without interventions, though, our bodies expend all their resources available resulting in weakened immune systems, inflammation, physiological turmoil, and deterioration of neuropeptide communication systems (Kling and Landgraf, 2014).

So how can you tell if you are experiencing stress? Perhaps you experience an uneasy feeling in the pit of your stomach, an elevated heart rate, or develop a nervous twitch in the corner of your eye. Everyone experiences stress differently, and everyone expresses and manages their stress stimuli in different ways (Zhang, 2022). Have you ever noticed after a taxing event like finals or a music festival, it's common to catch a cold? This can be due to the high levels of stimuli and the introduction of new stressors that an individual is not typically used to, so the body must compensate and in turn, needs additional resources for this "stress-catch up" cycle- depleting the body of resources and thus weakening the immune system (Zhang, 2022).

The science behind stress: How the body responds

Once the body has perceived a possible stressor, adrenal glands in the kidneys release a hormone called cortisol (known as the stress hormone), which regulates how the body utilizes carbs, proteins, and glucose (sugar), acts as an anti-inflammatory, increases blood pressure and blood glucose levels, and acts in regulating the body's circadian clock, otherwise known as the internal sleep-wake cycle regulator (Kling and Landgraf, 2014). When in fight-or-flight situations, it is crucial for the body to be able to utilize these mechanisms to quickly get out of harmful situations safely (Kling and Landgraf, 2014).

However, perhaps the scariest aspect of this bodily response to chronic stress is that the body can physically become dependent to the elevated cortisol levels in the body, just like the body can become addicted to any other stimulant (Kling and Landgraf, 2014). The ability of our bodies to become addicted to stress is not only affected by a genetic predisposition (making some more vulnerable to stress addiction than others), but also can help explain why individuals typically addicted to substances such as alcohol and tobacco are those also experiencing high levels of stress and cortisol (King and Landgraf, 2014).

Cardiovascular disease and other conditions

Cardiovascular disease (CVD) has been America's leading cause of death for over a century (CDC, 2022). Cardiovascular disease refers to a range of heart-related conditions like heart disease (disease of the blood vessels like atherosclerosis), heart attack (blood clot in the heart), strokes (blood clot in the brain), heart failure (weak

pumping of blood through the heart), arrhythmia (abnormal heartbeat rhythm), and heart valve problems (stenosis, prolapse, regurgitation) (AHA, 2022). CVD can deteriorate quality of life, be very painful, requires expensive treatments and medications, and is often fatal (AHA, 2022). Leading factors of CVD includes hypertension, high blood pressure, and tobacco use (all caused by stress or societal pressures), and high blood cholesterol, which is caused by poor diet high in cholesterol and saturated fats (CDC, 2022). Two significant factors towards the development of cardiovascular disease includes stress and diet (AHA, 2022). With cardiovascular disease rates only continuing to increase, attention to stress and food management may be one of the most accessible and impactful ways to combat the cardiovascular health crisis epidemic (Tai, 2021). America is living chronically, and it is costing many their lives, loved ones, and quality of life. Anxiety and depression are mood disorders that can also be stress-induced (Reichenberger, 2020). Not only can effective stress management reduce the risk of CVD, stress management may also aid in the prevention and treatment of anxiety and depression. (Reichenberger, 2020).

We may not be able to effectively rid of CVD for good, or even implement systemic change to stress management awareness, but we can work to improve the way we live now to live longer, happier healthier lives for ourselves, our future generations, and as health caregivers, our patients.

CVD treatment is painful, expensive, enduring, and often, permanent (CDC, 2022). To aid in CVD prevention, prevent burnout in nursing, and promote the best patient care possible we can attempt to educate ourselves and others on stress management, CVD, and other stress-related ramifications on our wellbeing. Knowledge

is a potential for change, and the greater knowledge we hold, the greater potential for change there is.

Stress within the field of nursing | burnout

Long hours, difficult and rigorous work that is mentally and physically taxing, and most importantly, the heavy weight and responsibility nurses hold for the work they undertake every day all lead to extreme levels of stress. One minor mistake on a nurse's part can mean life or death for another person, which is inevitably a lot of pressure for an individual. If nurse professionals don't know how to properly manage their stress, how are they expected to help anyone else manage their stress for the sake of their health, too? How are nurses expected to help others if they don't know how to help themselves first? The art of nursing includes a diagnosis of caring for yourself, too. The field of nursing is stressful, but nursing school can be equally, if not more stressful, at times. Nursing school is the perfect time for nursing students to learn how to manage their stress levels properly and appropriately for their own health and for their ability to care for patients throughout their careers.

Where does proper healthcare education and administration start? Our healthcare professionals are our biggest line of defense in health and wellness, and patient education. However, the number of healthcare professional burnout is skyrocketing (Shah, 2021). In 2018, 31.5% of nurses left the field due to burnout (Shah, 2021). By 2021, after the COVID-19 pandemic started, 95% of nurses (2.7 million nurses) reported feeling burnt-out in their nursing position within the last three years (Curry, 2021). In fact, burnout is the #1 reason why nurses leave the field (Curry, 2021). One possible

explanation could be that many healthcare professionals are sacrificing their own health and wellness for the sake of taking care of others. Hospitals are not doing enough to help the burnout crisis (Curry, 2021). If stress is one of the biggest health and wellness determinants, one could argue improper management of stress as a leading factor in professional nurse burnout. Nurses are a patient's LAST line of defense, and must learn how to care for themselves, too. Research benefitting the nurse is research also benefiting the patient.

Individual Stress Theory

Individual stress theory (IST) is based on the psychobiology, sociology, psychiatry, and anthropology of stress and was cultivated by a series of historical figures, originating with Walter Cannon in 1929 (Jacoby, 2021). Individual stress theory focuses on the relationship between emotional stress arousal to changes in physiology (Jacoby, 2021). Furthermore, the psychiatry of IST emphasizes the importance of how life events (stressors) are perceived and reacted to by an individual in determining vulnerability via the Social Readjustment Rating Scale (SRRS) (Jacoby, 2021). Various other scales and theories have been based off the Individual Stress Theory, like nurse anthropologist Lee Ann Hoff developing a crisis paradigm to help individuals manage crises, as well as the family stress theory (Jacoby, 2021).

IST Application

IST is used in this thesis as a basis for stressful life events, like nursing school, that can have serious, health-related impacts. Moreover, how an individual responds to

such a life event can possibly determine the resiliency of the student long-term. In alignment with the IST, focusing on how one responds to such high levels of stress in turn can provide better health and social readjustments to the various trials a nurse must face during one's career.

<div align="center">**STRESS MANAGEMENT**</div>

Types of stress management

Stress management control strategies can be split into subcategories: Primary and secondary control strategies. Primary control strategies aim to manage stress by changing the source of the stressor. Working to change the situation at hand is a primary control strategy. Secondary control strategies aim to manage stress by using efforts to adapt to the issue. Working towards a change in mindset to counteract stressful events is a secondary control habit. Both types of control strategies may be necessary for resilience for stressful situations that you can control (where primary control strategies can be implemented), and for stressful situations that you can't control (where secondary control strategies can't be implemented). Situations where primary control strategies may be considered useful includes stress from work, preventative health, and school. Situations where secondary control strategies may be considered useful includes uncontrollable illnesses like cancer, the divorce of a child's parents, or other traumatic events outside of one's control. Individuals who implement primary and secondary control strategies have shown higher rates of resilience than those who chose avoidant or disengagement strategies (Hayes, 2009).

Societal Response: Hustle Culture Burnout

Typical societally accepted mechanisms of coping with stress quite literally act in opposing favor of health and wellness and can cause further physiological and psychological health issues. Alcohol use, smoking, and hyper-caffeination have become so commonly accepted as ways to combat stress in society (secondary control strategies). However, these methods increase stress by activating the sympathetic nervous system (SNS) and increasing levels of anxiety, depression, and cortisol (stress hormone).

In addition, the "hustle" culture that has more recently gained popularity since the 2008 recession may play a role in raised stress and burnout levels in members of society and professionals alike (Martinez, 2022). A curated culture in younger adults across social media platforms have promoted the mentality that to reach your goals in a tough economic climate, one must work all day and night (Martinez, 2022). Individuals feel the need to "get ahead" financially by constantly working, freelancing side gigs or businesses, and working multiple jobs all at once. While working multiple jobs may be necessary for some people's finances, many are adapting the hustle way of life to pursue success and power, not realizing it may cost them their health when self-care isn't considered.

Pop culture figure and powerful entrepreneur Elon Musk said, "No one changed the world on 40-hour work weeks" (Martinez, 2022). However, the World Health Organization (WHO) warns individuals against overworking and conducted a study in 2016 that showed working at least 55 hours/week kills 745,000 people per year, increases the risk of stroke by 35%, and increases the risk of heart disease by 17%. (WHO, 2021). Dr. Maria Neira, the Director of the Department of Environment, Climate Change and

Health at the World Health Organization quoted "Working 55 hours or more per week is a serious health hazard" (WHO, 2021). With increasing numbers, WHO reported that 9% of the total global population overworks.

With the promotion of overworking by Elon Musk, one of the biggest business icons currently, societal acceptance, and pressures to not fall behind economically, American society has collectively grown more stressed, and burnt out after trying to light the candle at both ends (Martinez, 2022). Furthermore, overworked employees tend to sleep less, make errors more often, and can cost companies more due to high turnover, more costly health insurance, and having to take sick days more often (Martinez, 2022). Business owners implementing health and wellness resources and proper time off can instead benefit companies long-term in employee retention, quality of work, and customer/employee satisfaction.

Since the COVID-19 pandemic emerged, many things about the way people work and the way hustle culture is seen has changed. Many individuals started working from home, blurring the lines between work and home. Healthcare workers, including nurses, were especially overworked during a time of high demand of care and low supply of caregivers. At the end of the day, though, no job is worth the risk of stroke or heart disease (WHO, 2021). Following this widely accepted hustle culture can lead to higher stress and when managed with widely accepted coping mechanisms that do more harm than good, can significantly decrease one's quality of life and health.

Social Media

Social media has brought a new element into society within the last decade that has come with quite a list of pros and cons. Social media can help individuals connect with each other from a distance, but social media may have exacerbated some mental health issues for some. With the rise of social media, there has been a rise in rates of adolescents with body dysmorphia, anxiety, and depression (Wolfers, 2022). Individuals may be comparing themselves to others digitally now more than ever with the easier access. In addition, the instant dopamine release individuals feel when scrolling social media has shown addictive properties and lead to less productivity and more procrastination (Wolfers, 2022). At the same time, though, social media has provided a new range of educational information, making educational materials more accessible now than ever. For these reasons, we have chosen to list social media within the survey under 3 separate categories: social media to connect with others (transference), social medias to problem solve/educate (problem solving), and social medias to procrastinate (avoidant).

Stress and Inflammation: A holistic approach

While some pharmacological interventions may be effective, it is becoming increasingly apparent that western medications also come with harmful side effects and expensive costs (Zhang, 2022). Tackling the issue at the root of causation may be a more effective alternative. Adapting more effective methods of stress and food management could be the first step in tackling a CVD chronic health epidemic, and a place individuals can all start for themselves, and nurses can start for their patients, in mindful ways.

Many are starting to embrace alternative, more holistic approaches to stress management. Activities like meditation, mindful exercises like breath work or yoga, and other behavioral interventions have been linked with lowering blood pressure levels and decreasing inflammation, an indicator that the sympathetic nervous system (SNS), otherwise known as fight or flight, has been deactivated (Solano, 2022). Deactivation of the SNS means lower levels of cortisol, which means lower levels of bodily stress and inflammation (King and Landgraf, 2014). Another approach by Heather Adams believes a variety of mushrooms is an effective naturopathic method to treating inflammation, the root of almost all chronic diseases (2022). According to Adams, Porcini, Portobello, and Reishi mushrooms lower the risk of oxidative stress, an imbalance in cell repair when responding to stress, and can effectively aid in repair and prevention of tissue and cell damage (Adams, 2022).

Mediterranean-Style Foods

Others believe that naturopathic ways of eating like Mediterranean-style eating habits is a partial answer to CVD prevention by reducing inflammation and stress levels through lessened blood glucose and hypertension levels with a well-rounded diet full of whole, hearty foods (Martinez-Gonzales, 2019). Mediterranean-style eating focuses mainly on plant-based nutrition and proteins, and consists of unsaturated fats like olive oil, vegetables, fruits, unprocessed grains and legumes, low levels of meat and dairy which cause high cholesterol, and minimally processed foods (Martinez-Gonzales, 2019).

Foods containing high-density lipoproteins (HDL), known as the "good" cholesterol, such as salmon, avocado, olive oil, berries, and nuts prevent the buildup of

plaque within your arteries and help maintain healthy levels of blood pressure (Bhatt, 2018). Foods containing low density lipoproteins (LDL), known as the "bad" cholesterol, such as red and processed meats, fried foods, and full fat dairy carries cholesterol to your arteries and results in arterial plaque formation (Bhatt, 2018). In other words, HDL reduces inflammation and blood pressure, encouraging effective stress management while LDL encourages hypertension and the elevation of stress levels on your body. It may be beneficial to adjust diet to accommodate to the body's current stress levels for proper maintenance and prevention of CVD or other stress-related complications (Martinez-Gonzales, 2019).

Purpose and Hypothesis

The purposes of this study were to (1) assess the most common stress management techniques used by senior nursing students; (2) analyze the stress management mechanisms perceived to be the most effective by senior nursing students; (3) determine if further education on stress management mechanisms may be considered a helpful prospect for senior nursing students.

These goals were met through the utilization of a carefully curated survey administered to senior nursing students at Texas State University. The survey was curated using the Perceived Stress Scale and the Individual Stress theory. The survey was administered over a span of one day during 15 minutes of one of the senior class times with the additional option to take the survey after school at home on the same day.

The hypotheses were: (1) Senior nursing students would report high levels of perceived stress; (2) the most common stress management techniques would include problem-solving techniques primarily then avoidant techniques; (3) the stress management mechanisms perceived to be the most effective would include problem-solving and transference techniques; (4) further education on stress management techniques would be perceived to be effective.

Methods

Participants

The Texas State Senior Nursing class consisted of 77 students during the time of this survey. During administration of the stress survey, 53 students were present in person

at the Texas State Nursing school. 50 total responses were recorded. The participants ranged of various ethnicities and gender demographics and ranged in age from 18-35 years old. Only first semester seniors (S1) students were eligible to take the survey. Participation was completely voluntary and had no effect on any of the student course grades. Approval to conduct this study and a verbal script prior to administration of the survey was obtained by the Texas State Institutional Review Board.

Materials

A curated survey collecting information over age, perceived stress, use of stress management mechanisms, perceived effectiveness of stress management mechanisms, and opinions on stress management education were used. The perceived stress scale (PSS) is a psychological instrument consisting of 10 items rated on a five-point scale ranging from 0 (*never*) to 4 (*very often)* and was used to formulate the survey in a similar manner for most questions. Questions directly from the PSS were also used. Students were asked to take the survey online via Qualtrics Survey platform from their laptop, a materials requirement for the Texas State Nursing Program.

Design and Procedure

Prior to administration of the survey, participants were informed verbally and in writing of their right to refuse participation and the survey risks, benefits, and purposes. Informed consent was obtained prior to participation. The time commitment per student depended on how long it took to take the survey but lasted no longer than 15 minutes. Students were given the option to skip questions if deemed uncomfortable answering.

Only one student submitted an incomplete survey. Several questions included an open-ended option with a description box to list other answers if their answer was not listed. Several students did choose this option and those answers will be fully included in the data and analysis as much as possible.

Survey Data Analysis (method)

Survey responses were retained if a student responded to one question. Any empty (per survey item) or non-participating responses were removed. Likert responses were encoded to assess ordinal structure, where responses of "Never" were encoded as "-2"; "Almost Never" as "-1"; "Sometimes" = "0"; "Fairly often" = "1"; and "Very often" as "2". Responses reflecting feelings of frequency or "often" actions correspond to more positive numeric codes, and vice versa for feelings of non-occurrence or "never". All data was checked for normality and homoscedasticity prior to conducting statistical analyses where appropriate. All survey response data was non-normal, and nonparametric Kruskal-Wallis analyses and a Fisher's Exact Test were utilized. All statistical analyses were performed in R version 4.2.2 using packages 'car', 'moments', 'ggplot2', and 'ggpubr' (R Core Team 2022).

Stress Management Mechanisms subgroups

Stress management mechanisms considered for this study were separated into four groups: avoidant, problem-solving, emotion-focused coping, and turning to religion. The following mechanisms were grouped accordingly:

1. **Avoidant**
   a. Alcohol use or recreational drug use (including nicotine/tobacco)
   b. Reliance on caffeine
   c. Social media to distract self
   d. Procrastination tendencies (avoiding work or personal responsibilities at times)
   e. Getting roughly less than 7 hours of sleep per night or oversleeping

2. **Problem-solving**
   a. Time management via an online or paper planner/calendar
   b. Getting ahead on schoolwork
   c. Social media to problem solve/educate

3. **Transference**
   a. Physical exercise (gym, running, weightlifting, etc.)
   b. Cooking or baking
   c. Yoga, going for a walk, or other type of mindful exercise
   d. Designated rest times (besides nightly sleep, can include naps)
   e. Getting roughly 8-9 hours of sleep per night
   f. Attending social activities with family or friends
   g. Social media to connect with others
   h. Video games, movies, or TV shows

4. **Emotion-focused coping**
   a. Crying, feeling moody, or sad
   b. Counseling or therapy
   c. Keeping an optimistic attitude regardless of the situation

Results

Texas State University nursing students experience stressful situations fairly often to very often, regardless of age group ($X2^2$=1.37, p=0.51, Fig.1A). Furthermore, nursing students have sometimes to fairly often felt confident in their abilities to handle personal problems, with no differences across age groups ($X2^2$=2.48, p=0.3, Fig.1B). Additionally, age group had no effect on nursing student feelings on if difficulties were piling so high, they could not be overcome ($X2^2$=1.29, p=0.53, Fig.1C), with most students feeling that difficulties were sometimes piling up. Nursing students indicated that they almost never to sometimes could not cope with all the things they had to do, regardless of age group ($X2^2$=2.67, p=0.27, Fig.1D). Nursing students felt like they were almost never to sometimes on top of things across all age groups ($X2^2$=3.5, p=0.17, Fig.1E).

Nursing students in the 18 – 22 years old age bracket most often listed as time management via an online or paper planner/calendar as their top stress management technique utilized, followed by video games, movies, or TV shows, and using social media to get their mind off of responsibilities (Fig. 2A). Comparatively, nursing students in the 22 – 25 years old age group most utilized crying, feeling moody, or sad to their top coping mechanism, followed by using video games, movies, or TV shows and procrastination tendencies (Fig. 2B). Lastly, nursing students in the 25 – 35 years old age backet bracket relied on heavy caffeine and coffee use as their primary stress management technique, followed by overeating and/or undereating and procrastination tendencies (Fig. 2C).

Across all age groups, nursing students indicated they sometimes to fairly often found their stress management techniques effective ($X2^2=1.02$, p=0.6, Fig.3). Additionally, all age groups displayed equal opinions on if further education would help manage stress levels and accomplish goals more effectively (Fisher's Exact Test, p = 0.8958, Fig.4). Regardless of age group, roughly 50% of nursing students reported that additional education on stress management would be helpful (Fig. 4).

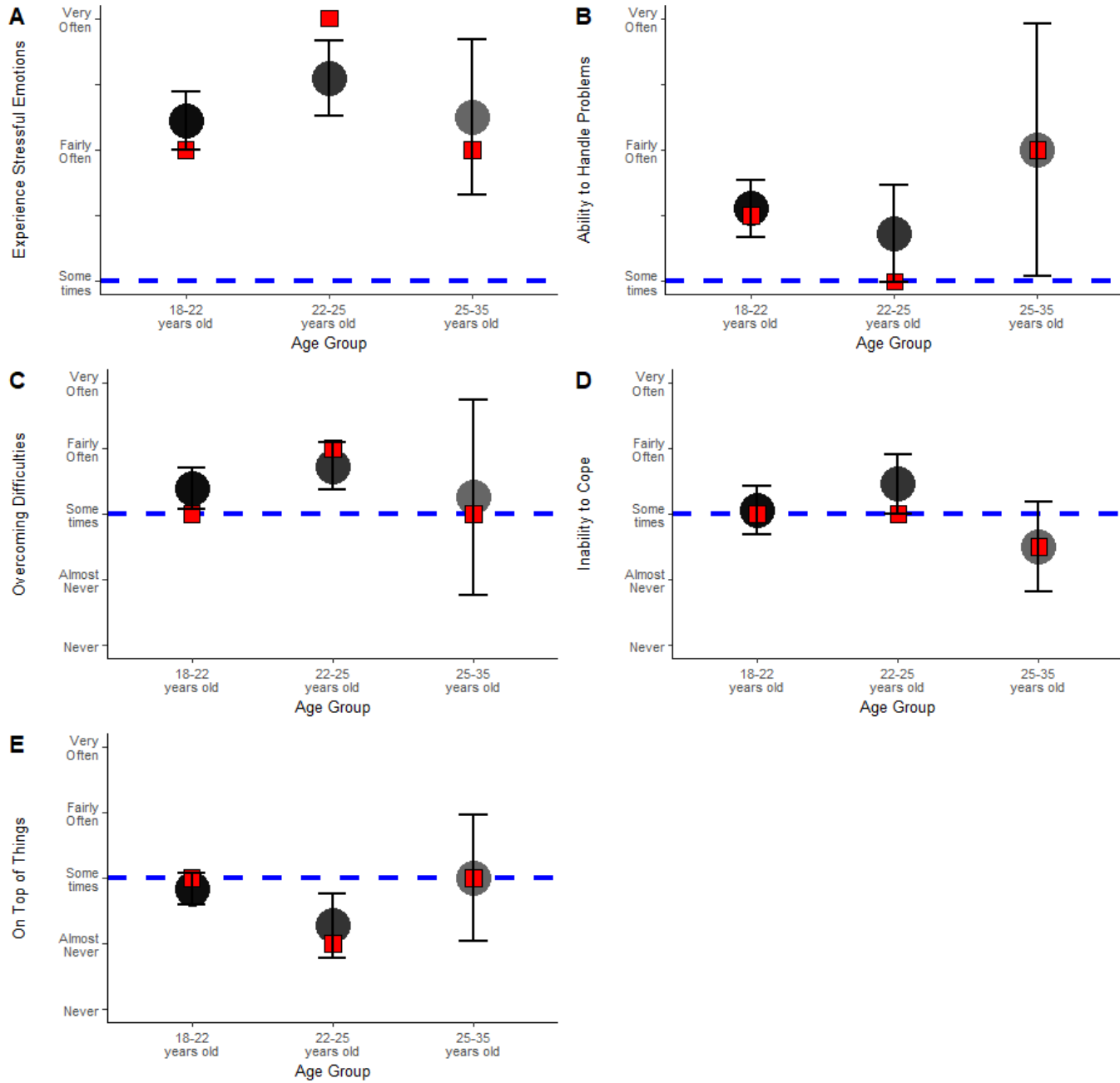**FIGURE 1:** Questions relating to perceived stress: (#1-5)

Figure 1. Dot plots indicating the average responses to the Perceived Stress Scale questions. Greyscale circles represent age group response averages (mean +/- 95%CIs) and red boxes represent age group medians. A) Responses to the question "How often do you find yourself experiencing stressful emotions?". B) Responses to the question "In the last month, how often have you felt confident about your ability to handle your personal problems?". C) Responses to the question "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?". D) Responses to the question "In the last month, how often have you found that you could not cope with all the things that you had to do?". E). Responses to the question "In the last month, how often have you felt that you were on top of things?".
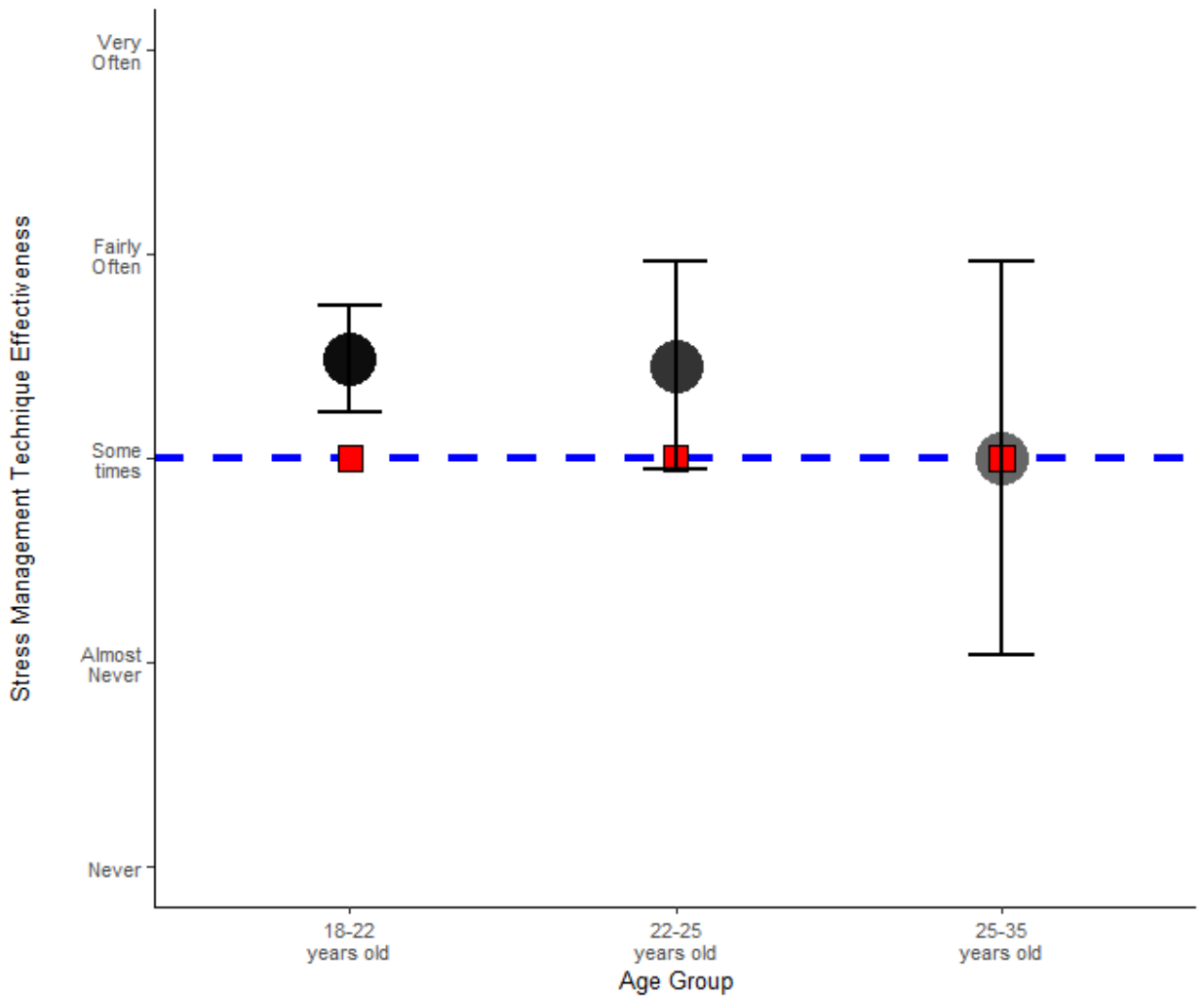
FIGURE 2

Figure 2. Dot plots indicating the average responses to the Perceived Stress Scale questions. Greyscale circles represent age group response averages (mean +/- 95%CIs) and red boxes represent age group medians. Reported effectiveness of most regularly used stress management techniques across all age groups.

Discussion

All age groups listed mostly the same techniques as most effective regardless of age bracket, as well as perceived stress levels and the most perceived effective mechanisms. What did differ, though, is that each age group had different most used mechanisms. In addition, the most perceived effective mechanisms did not necessarily

match with the most regularly used mechanisms by students. What this could mean is that each specific stress management mechanism used may not be as impactful to overall stress management as the type of mechanism and intentionality with stress management. Perceived stress was roughly the same regardless of age, but the type of stress management looked a bit different, so finding the stress management mechanism that works best for each individual intentionally could potentially aid stress levels. Regardless of age group, roughly 50% of students perceived further stress management education as possibly being effective. Options for further stress management education or check-ins with students to encourage intentionality could possibly be beneficial.

Limitations

The results of this study are limited by a small, volunteer-based sample from one nursing school. The sample was not representative of all nursing students as a whole and their stress management mechanisms. The limited data could have also produced skewed results due to outliers.

Basing data from a subset population of only one nursing school could also provide certain limitations such as specific stressors or resources from that school that could provide enhancement or diminution of specific levels of stress not seen at all other nursing schools. This could create an inaccurate depiction of stress levels in nursing students, raising, or lowering levels more so due to the mechanics of the school itself, rather than from being a nursing student.

Furthermore, out of 77 students in the course, only 53 students attending class on the day of survey administration could have played a factor in limited data collection. If

all students had attended, there may have been more participants, since almost every student who did attend class did participate.

Another limitation is the curated survey. While it was based on history theory and the PSS, it is possible that the survey only embodied a narrow range of answers and did not fully embody all possible answers, even with the "other" answer boxes available. Students may have felt it was too much extra work to list their own answer rather than just choose an answer that most similarly fit their answer. There also was one student who stopped the survey halfway through before submitting, which could have an impact.

A final limitation would be inaccuracy of answers to how the students truly feel/experience stress. These senior nursing students are under tremendous amounts of stress with limited time to complete their work and assignments, so every minute counts to them. Students may have breezed through the survey to get it over with, rather than truly answered thoughtfully and accurately. The students were given any remaining time within the 15-minute time frame to do independent work, so they may have been rushing to work on other things before lecture began.

Conclusion

This thesis is meant to be used as a tool for nursing students (and even non-students) to learn about the various stress management mechanisms and gather from this extensive research and study that every person has stress management mechanisms that look and feel different. What may be the most effective tactic in managing stress is intentionally checking in with yourself and analyzing if it feels effective to you or not. If stress levels aren't attended to, in the long run so much more time will be spent fixing the

damage that unmanaged stress will cause. The damage unmanaged stress causes does not beg a question of "if", but rather "when", taking up even more time and energy than if effective mechanisms were implemented earlier on. Not everyone may want further education on stress management mechanisms, but almost half of participants reported that it could be beneficial. This finding is more than enough to further resources to better manage the high amounts of stress nursing students experience more accessible to prevent school and future career burnout, thus bettering career satisfaction, patient care, and nurse retention rates.

Continuing research

Further research on stress management mechanisms and levels of perceived stress for a larger population from varying schools could be beneficial in gathering a more accurate representation of perceived stress levels and most used stress management mechanisms in nursing students. Additionally, research on effective tools and ways of educating students on how to manage high stress levels in the nursing field could potentially help nursing schools or other resources integrate stress management into education.

At the very least, providing easier accessibility for students to connect with resources that aid in their stress management and prevention could make a positive difference short-term, and long-term. Even if providing additional resources only aids a small subset of students, that is an additional subset of nurses to aid in patient care that may not have been able to continue in nursing due to things like dissatisfaction or burnout (possible consequences of unmanaged stress). Gaining an accurate representation

of how nursing students perceive stress could aid in reducing burnout in students later in their careers as nurses and thus better patient care.

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APPENDIX

A: Perceived Stress Scale

PSS

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, please indicate your response by placing an "X" over the circle representing HOW OFTEN you felt or thought a certain way.

	Never 1	Almost Never 2	Sometimes 3	Fairly Often 4	Very Often 5
1. In the last month, how often have you been upset because of something that happened unexpectedly?	O	O	O	O	O
2. In the last month, how often have you felt that you were unable to control the important things in your life?	O	O	O	O	O
3. In the last month, how often have you felt nervous and "stressed"?	O	O	O	O	O
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	O	O	O	O	O
5. In the last month, how often have you felt that things were going your way?	O	O	O	O	O
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	O	O	O	O	O
7. In the last month, how often have you been able to control irritations in your life?	O	O	O	O	O
8. In the last month, how often have you felt that you were on top of things?	O	O	O	O	O
9. In the last month, how often have you been angered because of things that were outside your control?	O	O	O	O	O
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	O	O	O	O	O

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B: Curated Survey

Instructions/Consent

Emme Handal, an undergraduate student at Texas State University, is conducting a research study to analyze stress management methods in Texas State senior nursing students. You are being asked to complete this survey because you are a senior nursing student at Texas State University.

Participation is voluntary. The survey will take approximately 15 minutes or less to complete.

You must be at least 18 years old to take this survey. This study involves no foreseeable serious risks. We ask that you try to answer all questions; however, if there are any items that make you uncomfortable or that you would prefer to skip, please leave the answer blank. Your responses are anonymous.

Possible benefits from this study are identifying effective versus noneffective stress management methods to be utilized by nursing students. Reasonable efforts will be made to keep the personal information in your research record private and confidential. Any identifiable information obtained in connection with this study will remain confidential and will be disclosed only with your permission or as required by law. The members of the research team, and the Texas State University Office of Research Integrity and Compliance (RIC) may access the data. The RIC monitors research studies to protect the rights and welfare of research participants. Data will be kept for three years (per federal regulations) after the study is completed and then destroyed.

If you have any questions or concerns feel free to contact Emme Handal or her faculty advisor Amanda Wagner.

Emme Handal, elh118@txstate.edu

Amanda Wagner, Nursing Academic Department, ogi5@txstate.edu

This project IRB: #8561 was approved by the Texas State IRB on October 5, 2022.

Pertinent questions or concerns about the research, research participants' rights, and/or research-related injuries to participants should be directed to the IRB chair,
Dr. Denise Gobert 512-716-2652 – (dgobert@txstate.edu) or to Monica Gonzales, IRB Regulatory Manager 512-245-2334 - (meg201@txstate.edu).

If you would prefer not to participate, please do not fill out a survey.
If you consent to participate, please complete the survey.
For a copy of consent, please print/save a copy for your records.

<u>Survey Portion</u>

Instructions.
The first 5 questions in this survey are going to ask about your feelings and thoughts **during the last month**.
Try to answer each question **quickly.**
That is, don't try to count the number of times you felt a particular way; rather indicate the alternative that seems like a **reasonable estimate**.

Preliminary question. What age range do you fall under?
- 18-22 years
- 22-25 years
- 25-35 years
- over 35 years

Q1. How often do you find yourself experiencing stressful emotions?
- Never
- Almost never
- Sometimes
- Fairly often
- Very often

Q2. In the last month, how often have you felt confident about your ability to handle your personal problems?
- Never
- Almost never
- Sometimes

- Fairly often
- Very often

Q3. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
- Never
- Almost never
- Sometimes
- Fairly often
- Very often

Q4. In the last month, how often have you found that you could not cope with all the things you had to do?
- Never
- Almost never
- Sometimes
- Fairly often
- Very often

Q5. In the last month, how often have you felt that you were on top of things?
- Never
- Almost never
- Sometimes
- Fairly often
- Very often

Instructions.

The next 5 questions are going to ask about the stress management techniques you most identify with using **in the last month.** Try to answer as openly and honestly as you can.

Your answers are completely anonymous.

Q6. Select any stress management techniques you regularly* practice
* **regularly= at repeated times, with equal or similar amounts of time between one time and the next.**

Physical exercise (gym, running, weightlifting, etc.)	**Social media to problem solve** (educational assistance or inspiration)	**Time management** via online and/or paper planner or calendar
Alcohol use or recreational drug use (including nicotine/tobacco)	**Social medias to get my mind off of my responsibilities**	**Video games, movies,** or **TV shows**
Yoga, going for a walk, or other type of mindful physical activity.	**Crying, feeling moody, or sad**	**Spiritual or religious practices**
Heavy caffeine/coffee use	**Counseling/therapy**	**Getting ahead on schoolwork**
Designated mindful rest times (meditation, naps, etc.).	**Getting roughly less than 7 hours of sleep/night** or **oversleeping**	**Cooking/baking**
Procrastination tendencies (avoiding work or personal responsibilities at times)	**Attending social activities** with family or friends	**Outside hobby** (please list)
Getting roughly 7-9 hours of sleep per night	**Keeping an optimistic attitude**	**Other** (please list)
Social media to connect with others (friends, family, loved ones, etc.)	**Overeating** and/or **undereating**	

Q7. Please list your selected stress management mechanisms that have proved most effective for your personal stress management.
(List greatest to least from top to bottom)
Select items and then rank them by clicking the arrows to move each item up and down.

Q8. Do you perceive your most regularly chosen stress management techniques to be effective?
- Never
- Almost never
- Sometimes
- Fairly often
- Very often

Q9. What do you believe your blockades are for effective personal stress management?
- Lack of time
- Lack of financial resources
- Lack of support in interpersonal relationships
- Lack of education on effective personal stress management
- Lack of motivation
- Unexpected life event
- Mental health and wellness struggles
- Other (please list)

Q10. Do you believe further education on stress management techniques would enable you to manage your stress levels and accomplish your goals more effectively?
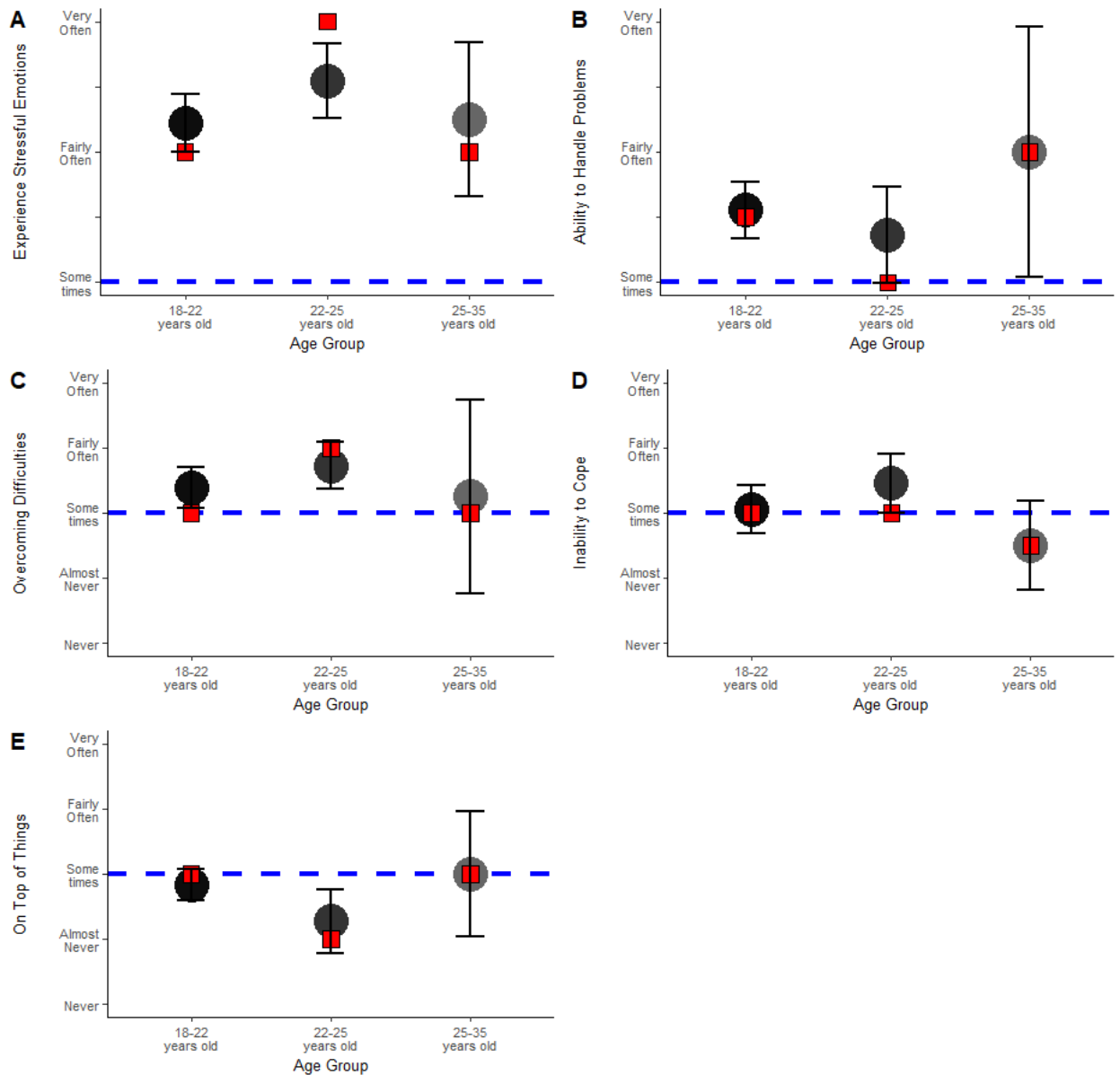- Yes
- No

C: Graphs

FIGURE 1 (PSS)

Figure 1. Dot plots indicating the average responses to the Perceived Stress Scale questions. Greyscale circles represent age group response averages (mean +/- 95%CIs) and red boxes represent age group medians. A) Responses to the question "How often do you find yourself experiencing stressful emotions?". B) Responses to the question "In the last month, how often have you felt confident about your ability to handle your personal problems?". C) Responses to the question "In the last month, how often have you felt

difficulties were piling up so high that you could not overcome them?". D) Responses to the question "In the last month, how often have you found that you could not cope with all the things that you had to do?". E). Responses to the question "In the last month, how often have you felt that you were on top of things?"
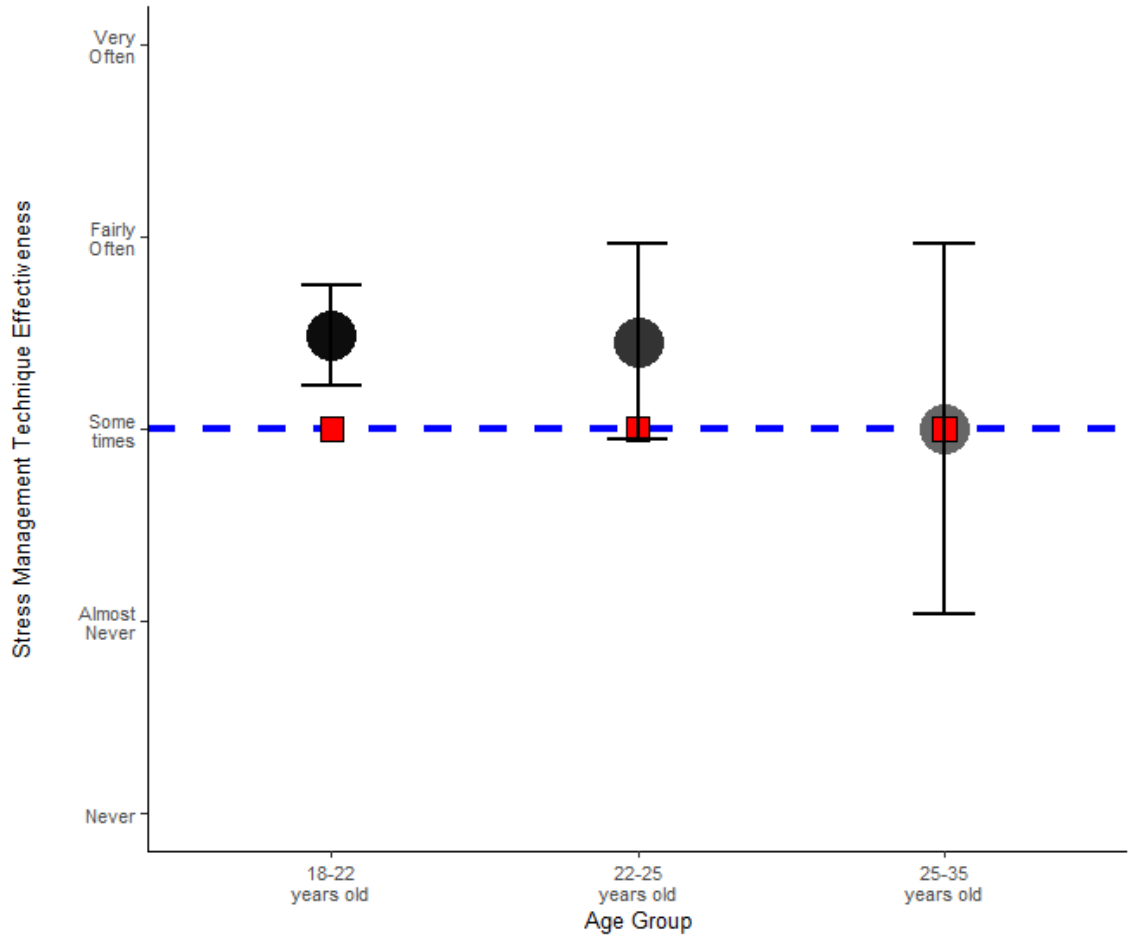
FIGURE 2

Figure 2. Dot plots indicating the average responses to the Perceived Stress Scale questions. Greyscale circles represent age group response averages (mean +/- 95%CIs) and red boxes represent age group medians. Reported effectiveness of most regularly used stress management techniques across all age groups.