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Health Priorities, Current Lifestyle Behaviors, and Barriers to a Healthy Lifestyle Among Emergency Department Nurses

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HEALTH PRIORITIES, CURRENT LIFESTYLE BEHAVIORS, AND BARRIERS TO
A HEALTHY LIFESTYLE AMONG EMERGENCY DEPARTMENT NURSES

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Education
at the University of Kentucky

By

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Lexington, Kentucky

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2020

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ABSTRACT OF THESIS

HEALTH PRIORITIES, CURRENT LIFESTYLE BEHAVIORS, AND BARRIERS TO A HEALTHY LIFESTYLE AMONG EMERGENCY DEPARTMENT NURSES

ABSTRACT

Emergency nurses are tasked with managing the hectic, unpredictable, and constantly changing environment of an ED. In addition, emergency nurses have been shown to have high levels of stress, irregular meal schedules, rotating shift work, long hours, and a lack of physical activity. Furthermore, research has suggested that nurses are at an increased risk for non-communicable diseases, such as diabetes, hypertension, and coronary heart disease (Phiri, et al., 2014), in addition to a high prevalence of obesity (Kyle, et al., 2016). In this study, 23 emergency nurses completed a 43-item survey regarding current behaviors and constructs of the Theory of Planned Behavior (TPB) model (attitudes, subjective norms, and perceived control) as it related to 8 identified health behaviors, and their intention to change at least one behavior in the following 30 days. Analysis revealed a non-significant relationship between components of the TPB, however findings indicated strong correlations between multiple health behaviors (e.g. physical activity and sleep, overall wellness and workplace stress, and, co-worker support and healthy eating). Although a small sample was obtained, the trends identified in the data are discussed along with potential interventions for ED nurses. Additionally, the implications of the current healthcare climate on the stress and wellbeing of ED nurses and the need for further research are considered.

KEYWORDS: Nurses, Emergency Department, Health Behaviors, Workplace Stress

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05/05/2020

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DEDICATION

To Lennox, Margaret, George, and Peter.

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This project is the product of two years of creativity, patience, and self-growth. Without the individuals below, this project would still be a dream scribbled in my notebook and I would still be searching for my purpose.

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INTRODUCTION

Nurses in the United States

Nurses account for the largest portion of the health profession, while also serving vital roles within the healthcare industry (Haddad & Toney-Butler, 2019). Approximately 29 million nurses and midwives around the world, 3.9 million of those are located here in the United States (Haddad & Toney-Butler, 2019). Within the state of Kentucky, there are approximately 86,464 registered nurses (RN) and licensed practical nurses (LPN) (Kentucky Board of Nursing, 2019). Nursing is a predominantly female [90.4%] subgroup within healthcare (Bureau of Labor Statistics (BLS), 2017), that according to researchers, faces a rapidly aging workforce and hiring shortage (Sherman et al., 2013). The profession continues to face shortages due to high turnover and inequitable distribution of the workforce (Haddad & Toney-Butler, 2019; Sawaengdee et al., 2016). The shortage of nurses is clearly outlined by the American Nurses Association [ANA], which reports that there will be more registered nursing jobs available in the United States through 2022 than any other profession in the nation (ANA, 2018). In fact, the U.S Bureau of Labor Statistics (BLS; 2017) reported that employment for nurses is expected to increase by 15% through 2026.

Recently, health behaviors of adults within the United States have been under intense scrutiny as the incidence of overweight and obesity have been recognized as a public health problem (Nahm et al., 2012) affecting approximately 68% of the population (Institute of Medicine, 2010; National Center for Health Statistics, 2010). Overweight personnel are at a higher risk for illness, including diabetes, cardiovascular disease, and chronic kidney disease (Nahm et al., 2012). At the forefront of national initiatives to combat obesity (National Institute of Health, 2017), nurses are in an optimal position to

deliver care and education, while serving as role models to the general public. This position is supported by initiatives from the American Nurses Association, who in 2017 declared the “Year of the Healthy Nurse” (American Nurses Association, 2017).

Unfortunately, research findings are cause for concern regarding the health of nurses, as many report less than optimal health (Sveinsdóttir & Gunnarsdóttir, 2008), in addition to the majority who are overweight (Miller et al., 2008; Zapka et al., 2009). However, given the time that has passed since the publication of this research and the current state of health in the general population, it can be inferred that the health of nurses is in parallel with the general population.

Wellness

In the 1946, the World Health Organization [WHO] defined health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946). Even though this definition has been criticized for being unattainable, due to the inclusion of the word ‘complete’, it provides a broad idea of the medical definition beyond the absence of disease (Stoewen, 2015). According to the WHO (2006), social, economic, and physical environments, along with an individual’s characteristics and behavior are all classified as primary determinants of health.

Researchers maintain that sustaining and improving overall health relies not only on external and environmental factors, but lifestyle choices indicating an understanding of wellness (Stoewen, 2015). Wellness is a process, deliberate in nature, which reinforces the need for individuals to become aware of the choices they make and the direct impact on lifestyle outcomes (Johnson, 1986; Swarbrick, 1997). The National Wellness Institute defines wellness as “an active process through which people become aware of, and make choices toward, a more successful existence” (National Wellness Institute, 2006). This

active process is seen as a holistic and multi-dimensional, inclusive of seven different dimensions: physical, emotional, intellectual, social, environmental, spiritual, and occupational (Hettler, 1976; Swarbrick, 2006). In relation to the current study, health is understood as a state of being that refers to the physical, mental, and social well-being, whereas wellness is the investment in living a healthy lifestyle in order to improve overall well-being. (Stoewen, 2015).

Health Behaviors of Nurses

Nurses are a unique subpopulation who are aware of the preventative measures for obesity/overweight, while also frequently being responsible for the education of the public about these matters (American Nurses Association, 2017; Nahm et al., 2012). This recognition is also made by the American Nurses Association, which includes multiple provisions in their code of ethics pertaining to the health of nurses, and their practice as healthcare professionals. The following provisions are detailed within the code of ethics:

Provision 3: The nurse promotes, advocates for, and protects the rights, health, and safety of the patient.

Provision 4: The nurse has the authority, accountability, and responsibility for nursing practice; makes decisions; and takes action consistent with the obligation to promote health and to provide optimal care.

Provision 5: The nurse owes the same duties to self as to others, including the responsibility to promote health and safety, preserve wholeness of character and integrity, maintain competence, and continue personal and professional growth.

Provision 8: The nurse collaborates with other health professionals and the public to protect human rights, promote health diplomacy, and reduce health disparities (American Nurses Association, 2015, p. v).

Despite this, research has suggested that nurses are at an increased risk for non-communicable diseases, such as diabetes, hypertension, and coronary heart disease (Phiri et al., 2014), in addition to a high prevalence of obesity, poor eating habits, and lack of physical activity (Kyle et al., 2016). The Mayo Clinic (2015) identified various risk factors for obesity, which includes genetics, family lifestyle, inactivity, unhealthy diet, medical problems, certain medications, social and economic issues, age (older adults), pregnancy, quitting smoking, and lack of sleep. Nahm et al. (2012) address how some of these concerns, including stress factors, irregular meal schedule, work schedule, physical activity, and quality of sleep are of particular concern to the health behaviors of nurses. As evidenced by the presented research, thoughtful consideration needs to be given to the implementation of educational and training programs for nurses to address the current health concerns they are facing, so they can provide more effective treatment of patients.

Emergency Department Nurses

For the purpose of this research, the target population was emergency department nurses working at the facilities within UK HealthCare. Emergency Department nurse stand at the frontline of healthcare, responsible for delivering care in high-stakes and high stress environments (Schumacker et al., 2019). Therefore, this research was interested in understanding the current behaviors, attitudes, subjective norms, and perceived control of ED nurses in regard to eight identified health behaviors, and ultimately their intention to make at least one change in their lifestyle to promote health and wellness within the

following 30 days. Based on the clear differences in nursing responsibilities, due to varying specialties, it is important to understand emergency department nursing as a unique occupation.

Work in emergency departments is defined as hectic, unpredictable, and constantly changing. Not only are emergency department nurses confronted daily with a broad scope of diseases, injuries and problems, they also encounter severe injuries, death, suicide, as well as verbal and physical aggression from patients (Adriaenssens et al., 2012). Given the exposure, emergency nurses face a higher incidence of PTSD symptoms than other nursing specialties, specifically, both British and Canadian studies found that approximately 20% of their emergency department nurse samples met the criteria for PTSD (Clohessy & Ehlers, 1999; Laposa et al., 2003). Additionally, within a systematic review aimed at exploring the prevalence of burnout in emergency department nurses, researchers found that more than 25% of emergency department nurses exceeded the limit for various dimensions of burnout (Adriaenssens et al., 2014). Furthermore, researchers have noted that emergency department nurses often move from one traumatic event to the next, leaving minimal time for decompression or recovery (Adriaenssens et al., 2012).

As evidenced by the literature, the importance of examining the health behaviors, priorities, and barriers among emergency department nurses in the United States is of significant consequence. Furthermore, in conjunction with previous research, this study sought to understand why health disparities are present among nurses working in the emergency department and potential strategies that, if implemented, could improve the health of nurses and support their role as health advocates. Furthermore, the current study

is a unique snapshot of the situation for ED nurses at the precipice of a pandemic and provides a baseline for researches examining conditions during and post pandemic.

METHODOLOGY

The purpose of this chapter is to detail the procedures employed in the research design, recruitment of participants, development of survey items, and analysis of data.

Research Questions

- 1) Is there a significant difference between the individual effects of healthy eating, sleep hygiene, physical activity, work stress, mental health, overall wellness, co-worker support, and supervisor support on the intention of ED nurse to make at least one change in their lifestyle to promote health and wellness?
- 2) Does the Theory of Planned Behavior help explain the relationship between the eight identified health behaviors and an individual's intention to perform the identified health behavior?

Research Design

A cross-sectional study was conducted to examine study participants' current behavior, perceived personal value of importance, perceived colleague value of importance, and individual perceived control of eight health indicators (see Appendices 1 - 3: Informed Consent, Health Indicators Scale, Demographic Questionnaire). The survey was disseminated via email from the Enterprise Director of the Emergency Department to all RN's.

Participants

Participants were recruited from an emergency department at an academic healthcare center in the southeastern United States. The hospital serves as a Level I Trauma Center and handles approximately 40,000 patient visits per year (University of Kentucky Healthcare, 2017). This emergency department employs approximately 120 Registered Nurses.

Recruitment

Following approval from the Institutional Review Board (IRB) for the Protection of Human Subjects, information about the study and a link to complete the survey was provided to, and forwarded by, the Enterprise Director of Emergency Services at the hospital. In order to participate in this study participants had to be a Registered Nurse (RN), employed at research site, employed within the Emergency Department, proficient in English, both verbally and written, and 18 or older to participate.

Qualtrics Survey System (Qualtrics, LLC, Provo, Utah) was used for survey development and dissemination. According to Dillman et al., (2014) the benefits of web-based methods for data collection include easier access to participants, speed and low cost, and economies of scale. Figure 1 is a chart of the study-sampling process carried out for the purpose of this research.

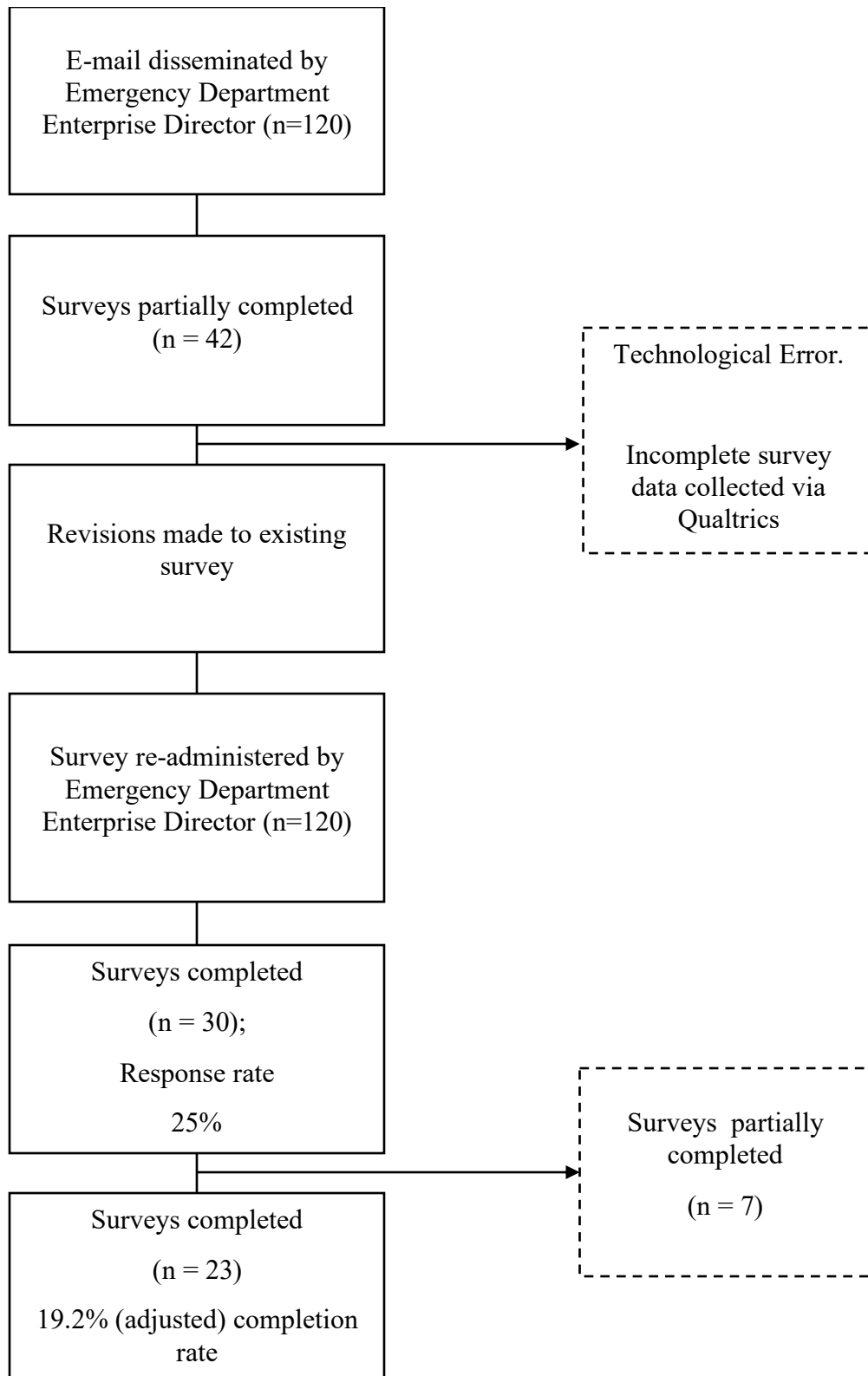
Unfortunately, during the initial round of data collection, there was a technological glitch in the survey collection software. Survey participants did not have access to the complete survey. Due to this error, the data obtained during the initial collection was rendered useless and not included in this study.

Following the revisions made to the survey, a new survey was forwarded by the Enterprise Director of Emergency Services to participants. A reminder email was sent every week, for four weeks. The final reminder email included details about survey closure. Upon receiving the email, participants clicked the embedded link and were redirected to the survey. Prior to the start of the survey, participants were presented with a cover letter including information about the study. All data was gathered anonymously and did not include any of the 18 HIPAA privacy rule Protected Health Information (PHI)

identifiers (HIPPA Journal, 2017). Data was collected from February 17, 2020 – March 15, 2020.

30 surveys were completed and following data cleansing 7 surveys appeared to be partially completed (<50% completed). Therefore, a total of 23 participants completed the survey indicating a response rate of 19.2%. It must be noted that it is possible that some participants completed the survey both during the first and second round of data collection.

Figure 1. Study-sampling process.



Instrumentation

Demographic Characteristics.

The demographic portion of the scale included 12-items. Demographic characteristics collected included gender, sex, age, race, marital status, highest degree of nursing education, ED role, predominant shift worked, board certified in a specialty area, years practicing as an RN, and, years working in the ED.

Nurses Health Behaviors and Intention Scale.

This scale was developed for this study using the Theory of Planned Behavior framework, and informed by previous research (Heath & Crowell, 2007; Heath et al, 2007; Heath et al., 2005). The scale is a 33-item instrument that uses various 7-point Likert type scales. Participants rated their current behaviors, attitude toward health behavior, perceived colleague value of importance of health behavior, and individual perceived control of the eight health indicators of a scale of 1-7. Health indicators measured included healthy eating, sleep hygiene, physical activity, workplace stress, mental health, wellness (spiritual, occupational, environmental, emotional, physical, spiritual, and intellectual), co-worker support, and workplace supervisor support. Questions within the scale include “How likely are you to regularly eat healthy meals, based on National Recommendations? (current behavior); On a scale of 1-7, how important is it for YOU to eat healthy meals? (attitude); On a scale of 1-7, how important do you believe your Emergency Department nurse colleagues think it is to eat healthy meals? (subjective norm); and, On a scale of 1-7, how much control do you think you have over your ability to eat healthy meals? (perceived control).

In order to ensure content validity, both a cognitive interview conducted with an Emergency Department nurse and an instrument review by a panel comprised of five

clinical experts in the field, including researchers and faculty were conducted. The panel rated the simplicity, clarity, and readability of each question on a scale of 1-5 (see Table 1). Additionally, there was the opportunity for panel members to provide qualitative feedback within each question. The Item – Content Validity Index (I-CVI) was found for each subscale, as indicated in Table 2. The I-CVI was calculated by the number of experts giving ratings of 3-5, divided by the number of experts (Zamanzadeh et al., 2015). Following the instrument review and I-CVI conducted by the panel, revisions were made to the scale. The original scale and revised version can be found in Appendix A and Appendix B, respectively.

Table 1. Expert Scale Scoring Method

Simplicity	Clarity	Readability
1 – irrelevant	1 – irrelevant	1 – irrelevant
2 – item needs substantial revision	2 – item needs substantial revision	2 – item needs substantial revision
3 – item needs some revision	3 – item needs some revision	3 – item needs some revision
4 – relevant – minor revision needed	4 – relevant – minor revision needed	4 – relevant – minor revision needed
5 – very simple to understand	5 – very clear	5 – relevant – able to read and comprehend

Table 2. Scale Content Validity

	Simplicity	Clarity	Readability
Current Behaviors	0.86	0.60	0.74
Attitude	0.83	0.71	0.89
Subjective Norms	0.80	0.71	0.83
Perceived Control	0.78	0.75	0.87
Intention	1	1	1

Data Analysis

The quantitative analysis consisted of three steps; step one was to ensure the validity of the scale developed for this research. The internal consistency (Cronbach's alpha) of the items in the scale were acceptable at $\alpha = .770$. The internal consistency of the individual subscales ranged from poor (Current Behaviors $\alpha = .561$), to acceptable (Perceived Control $\alpha = .722$; Attitude $\alpha = .778$), to good (Subjective Norms $\alpha = .868$).

Step two included gathering the descriptive statistics (means and standard deviations) for the scale, the individual subscales (current behaviors, attitudes, subjective norms, and perceived control), and the health behaviors using SPSS (version 26; SPSS Inc, Chicago, IL) to compute the total score of each subscale.

Step three, as it relates to both research questions, in order to investigate the factors that positively or negatively effect intention to change behavior correlation methods were used to analyze the relationship between the independent variables (current behaviors, attitudes, subjective norms, and perceived control) and the dependent variable (intention to change). In addition, in order to examine the difference between the

identified health behaviors effect on an individual's intention to change a behavior, relationships were measured between the health behaviors using correlation methods.

RESULTS

The purpose of this study was to examine the health behaviors and priorities of emergency department nurse's utilizing constructs from the Theory of Planned Behavior; attitudes, subjective norms, and perceived control, and understand their correlation with intention for eight identified health behaviors. Data was collected through a scale made available on-line. Results are based upon the data from 23 participants. Demographic and Nurses Health Behaviors and Intention Scale subscale results are presented below. In this chapter, a brief descriptive analysis for each construct will be provided, in addition to the statistical evidence of correlation among variables in reference to the research questions outlined in chapter 3.

Demographics

Of those that responded to the Web-based survey, 22 (95.7%) identified as cis-gender women, 19 (82.6%) being between the ages of 25 and 44, and 20 (74.1%) as White (see Table 3). Most ED nurses (82.6%) worked as staff nurses within the department. Although 14 (60.9%) nurses who participated were not board certified, 15 (65.2%) were seeking advanced education in degrees including Ph.D., MSN, and Advanced Practice. 18 (78.3%) participants completed the survey having already completed a bachelor's degree. Within the sample, 22 (95.7%) indicated working 12-hour shifts, 9 (39.1%) of whom work predominantly night shifts. Experience among participants 13 (56.5%) had 4+ years of experience, meanwhile 12 (52.2%) participants indicated only having 1-3 years of experience as an ED nurse.

Table 3. Demographics

Variable	n	%		n	%
Gender Identity			ED Role		
Man	1	4.4	Nurse Manager/ Director	1	4.4
Women	22	95.7	Charge Nurse	3	13.1
Sex			Staff Nurse	19	82.6
Cisgender	23	100	Predominant Shift Worked		
Age			12-Hour Day	13	56.5
20 – 24	4	17.4	12-Hour Night	9	39.1
25 – 34	10	43.5	8-Hour Day	1	4.4
35 – 44	9	39.1	Board Certified in Specialty Area		
Race			Yes	7	30.4
American Indian or Alaskan Native	2	7.4	No	14	60.9
Black or African American	1	3.7	In progress	2	8.7
Hispanic	4	14.8	Seeking Advanced Education		
White	20	74.1	Yes	15	65.2
Marital Status			No	6	26.1
Single (Never Married)	9	39.1	In progress	2	8.7
Married, or in a Domestic Partnership	11	47.8	Years of Experience as an RN		
Divorced	1	4.3	1 – 3 years	10	43.5
Separated	2	8.7	4 – 6 years	2	8.7
Highest Degree of Nursing Education			7 – 9 years	5	21.7
Masters	3	13.1	10 + years	6	26.1
Bachelors	18	78.3	Years of Experience as an ED Nurse		
Associate Degree	2	8.7	1 – 3 years	12	52.2
			4 – 6 years	4	17.4
			7 – 9 years	3	13.1
			10 + years	4	17.4

Research Question 1: Health Behaviors and Intention

The first research question stated that there was no significant difference between the eight identified health behaviors and their individual effects on the intentions of ED nurses to make at least one lifestyle change. This hypothesis was partially supported. Specifically, findings revealed no significant relationships between the eight identified health behaviors and the intention of ED nurses to make at least one change within their lifestyle. However, significant relationships were found between numerous variables (see Table 5). These include, physical activity and sleep ($r = .886, p = <.001$); mental health and work stress ($r = .538, p = .008$); overall wellness and work stress ($r = .618, p = .002$); overall wellness and mental health ($r = .662, p = .001$); and, co-worker support and healthy eating ($r = .566, p = .006$).

Research Question 2: TPB Constructs and Intention

Current Health Behaviors.

On a 7-point scale (1 = Extremely Unlikely, 7 = Extremely Likely), ED nurses indicated their likelihood to participate in specific health behaviors. ED nurses in the sample rated their likelihood to regularly consume health meals as relatively neutral (4.52 ± 1.38) and indicated their likelihood to participate in regular physical activity as somewhat unlikely (3.87 ± 1.90). Rated lowest among current behaviors, ED nurses in this sample indicated their likeliness to get adequate rest as moderately unlikely (3.70 ± 1.92). This sample of ED nurses indicated they encounter stress at work (5.83 ± 1.23), supportive co-workers ($5.87 \pm .989$), moderate mental health (4.52 ± 1.20), and overall wellness (4.48 ± 1.16). Nurses in this sample indicated moderate supervisor support (4.39 ± 1.27).

Attitudes.

As a measure of importance, ED nurses in this sample rated their own personal importance for participation in the aforementioned health behaviors. This sample of ED nurses indicated relatively high levels of importance for all health behaviors; healthy eating ($5.91 \pm .949$); adequate rest (6.30 ± 1.11); physical activity (5.43 ± 1.41); workplace stress ($6.48 \pm .898$); mental health ($6.52 \pm .665$); overall wellness ($6.39 \pm .839$); co-worker support ($6.74 \pm .619$); and, ($6.70 \pm .559$). [Something missing]

Subjective Norms.

Due to the importance of significant others, colleagues for the purpose of this research, participants were asked to rate the extent to which they believe the measured health behaviors are important to their colleagues. Healthy eating (4.74 ± 1.25) was rated lowest, meanwhile co-worker (6.17 ± 1.07) and supervisor support (6.22 ± 1.04) were indicated as being most important. ED nurses in this sample rated adequate rest (5.00 ± 1.51), physical activity (5.13 ± 1.18), mental health (5.13 ± 1.14), workplace stress (5.39 ± 1.16), and overall wellness (5.43 ± 1.12) as being moderately important (see Table #).

Perceived Control.

Identified as an individual's perceived ability or difficulty with performing a task, ED nurses in this sample were asked to rate their personal perceived levels of control on a 7-point scale for each of the identified health behaviors. Nurses in this sample indicated moderately low levels of control over feeling supported by colleagues (3.95 ± 1.46) and supervisors (3.36 ± 1.40). Additionally, participants rated both receiving adequate rest (4.78 ± 1.62) and managing workplace stress ($4.57 \pm .945$) as being moderately in their control. Furthermore, ED nurses in this sample recognized having moderately high

control over their healthy eating (5.70 ± 1.10), physical activity (5.35 ± 1.30), mental health ($5.48 \pm .947$), and overall wellness ($5.57 \pm .992$) behaviors.

Variable Relationships.

It appears that for ED nurses in this sample, there is a moderately positive relationship between Current Behaviors and Attitudes ($r = .580, p < .05, \alpha = .05$); see Table 4), in addition to Current Behaviors and Perceived Control ($r = .488, p < .05, \alpha = .05$) towards the measure health behaviors. As per Table 4, there appears to be no significant relationship between remaining variables. Linear regression models were used to test relationships between independent variables and demographics, no significant relationships existed.

Table 4. Construct Correlations

		Current Behaviors	Attitude	Subjective Norm	Perceived Control	Intention to Change Behavior
Current Behaviors	Pearson Correlation	1	.580**	-.164	.488*	-.181
	Sig. (2-tailed)		.004	.455	.021	.410
	N	23	23	23	22	23
Attitude	Pearson Correlation	.580**	1	.286	.042	.086
	Sig. (2-tailed)	.004		.186	.853	.697
	N	23	23	23	22	23
Subjective Norm	Pearson Correlation	-.164	.286	1	-.288	.253
	Sig. (2-tailed)	.455	.186		.193	.244
	N	23	23	23	22	23
Perceived Control	Pearson Correlation	.488*	.042	-.288	1	-.150
	Sig. (2-tailed)	.021	.853	.193		.506
	N	22	22	22	22	22
Intention to Change Behavior	Pearson Correlation	-.181	.086	.253	-.150	1
	Sig. (2-tailed)	.410	.697	.244	.506	
	N	23	23	23	22	23

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 5. Correlation of Health Behaviors

		Healthy Eating	Sleep	Physical Activity	Work Stress	Mental Health	Overall Wellness	Co-worker Support	Supervisor Support	Intention to Change
Healthy Eating	Pearson Correlation	1	.050	.253	.257	.284	.330	.566**	.502*	-.191
	Sig. (2-tailed)		.822	.245	.237	.189	.124	.006	.017	.384
	N	23	23	23	23	23	23	22	22	23
Sleep	Pearson Correlation	.050	1	.886**	-.150	-.206	-.008	-.070	.093	.312
	Sig. (2-tailed)	.822		.000	.494	.346	.972	.758	.681	.148
	N	23	23	23	23	23	23	22	22	23
Physical Activity	Pearson Correlation	.253	.886**	1	-.125	-.029	.034	-.004	.215	.291
	Sig. (2-tailed)	.245	.000		.571	.894	.878	.987	.337	.178
	N	23	23	23	23	23	23	22	22	23
Work Stress	Pearson Correlation	.257	-.150	-.125	1	.538**	.618**	.156	.496*	.142
	Sig. (2-tailed)	.237	.494	.571		.008	.002	.489	.019	.519
	N	23	23	23	23	23	23	22	22	23
Mental Health	Pearson Correlation	.284	-.206	-.029	.538**	1	.662**	.204	.483*	-.077
	Sig. (2-tailed)	.189	.346	.894	.008		.001	.364	.023	.728
	N	23	23	23	23	23	23	22	22	23
Overall Wellness	Pearson Correlation	.330	-.008	.034	.618**	.662**	1	.110	.372	-.145
	Sig. (2-tailed)	.124	.972	.878	.002	.001		.626	.088	.509
	N	23	23	23	23	23	23	22	22	23
Co-worker Support	Pearson Correlation	.566**	-.070	-.004	.156	.204	.110	1	.426*	.060
	Sig. (2-tailed)	.006	.758	.987	.489	.364	.626		.048	.792
	N	22	22	22	22	22	22	22	22	22
Supervisor Support	Pearson Correlation	.502*	.093	.215	.496*	.483*	.372	.426*	1	-.212
	Sig. (2-tailed)	.017	.681	.337	.019	.023	.088	.048		.343
	N	22	22	22	22	22	22	22	22	22
Intention to Change Behavior	Pearson Correlation	-.191	.312	.291	.142	-.077	-.145	.060	-.212	1
	Sig. (2-tailed)	.384	.148	.178	.519	.728	.509	.792	.343	
	N	23	23	23	23	23	23	22	22	23

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

DISCUSSION

Due to the unpredictability of this profession, ED nurses must equally possess general and specific knowledge and training in order to provide patient care to people of all ages. However, the findings regarding the health of nurses, as many researchers report is less than optimal (Sveinsdóttir & Gunnarsdóttir, 2008; Schumacker et al., 2019) and is cause for concern (Zapka et al., 2009). Furthermore, researchers indicate that the majority of nurses are overweight (Miller et al., 2008). Therefore, the current project was interested in understanding the behaviors, attitudes, subjective norms, and perceived control of ED nurses in regards to eight identified health behaviors, and ultimately their intention to make at least one change in their lifestyle to promote health and wellness within the following 30 days. Thus, the following section discusses the identified trends in the data relative to the literature, implications, research limitations, and recommendations for future research.

Research Question 1: Health Behaviors and Intentions

Research findings indicated an insignificant correlation between measured health behaviors and an individual's intention to change their behavior. Nonetheless, there are multiple correlations between health behaviors, and although not surprising, the manner in which they correlate offers the opportunity for a greater discussion. Relationships explored further include that between physical activity and sleep, overall wellness and workplace stress, and, co-worker support and healthy eating.

As depicted in the results, the strongest correlation existed between physical activity and sleep. For instance, 22 of 23 study participants identified working predominantly 12-hour shifts, either day or night. Researchers have found that nurses

working 12-hour shifts do not achieve an appropriate amount of sleep between shifts to ensure recovery, either physically or cognitively, regardless of working day or night (Geiger-Brown et al., 2012). Therefore, it seems reasonable that regular participation in physical activity is difficult to adopt, or even maintain. The nurses in this sample appear to be aware of their less-than-desirable participation in regular physical activity, similar to nurses in previous research (e.g., Nahm et al., 2012) who, despite long working hours and the physically demanding nature of their job, felt they were not getting enough exercise. However, nurses on average are quite active during their shift, walking between four and five miles during a 12-hour shift (Welton et al., 2006). Yet, regardless of the number of steps they walk during their shift, many nurses report getting a lack of exercise (Nahm et al., 2012). These findings appear similar to the findings of the current research that indicates there is an awareness for the importance of physical activity, however, many struggle with regular participation.

Results also yielded moderate to strong correlations between overall wellness and 1) mental health and, 2) workplace stress. As previously explored, the relationship between mental health and overall wellness is not surprising, based on the components that make up mental health (e.g. the emotional, psychological and social well-being). The second behavior, workplace stress, appears to also have a moderate to strong relationship with overall wellness. Emergency Departments by nature are high stress, often high speed, environments that are forced to embrace repeated acute stressful events. Nurses within departments are faced with repeated stressful events including sudden deaths, traumas, resuscitations, and possible patient aggression and violence (Healy & Tyrrell, 2011). Overall, some researchers have concluded that 97% of ED staff within their

sample experienced stress at work, further solidifying the argument that these environments are breeding grounds for workplace stress (Healy & Tyrrell, 2011). In addition to the aforementioned stressors, McVicar (2003) and Williams et al. (1998) found additional workplace stressors identified by nurses included workload, leadership/management issues, professional conflict and the emotional demands of caring. Moreover, the works of McGowan (2001) and Shader et al. (2001) emphasized workplace stress to be greater on today's workforce. Researchers believe this suggests the stress from the recognized sources has increased, and/or supplementary sources are subsidizing the growing effects (McVicar, 2003). Furthermore, a study conducted through a collaboration between the Board of Certification for Emergency Nursing (BCEN), the MedEvac Foundation International, Emergency Nurses Association (ENA), Society of Nurses (STN), and Air & Surface Transport Nurses Association (ASTNA), found that substantial proportions of early-caree nurses intended to leave the specialty in less than 5 years (Schumacker et al., 2019). Findings indicate that the growing departure of nurses from the field leaves those remaining with heavier workloads and a lack of resources, proving to exacerbate workplace stress levels. As workplace stress increases for nurses, it is vital to recognize the physiological effects of consistent reactivation of stress pathways. Thus, there appears to be a current need for workplace stress interventions for ED staff.

While this evidence is compelling, only anecdotal evidence exists regarding the workplace stress of the current serious health situation. For instance, nurses and doctors are continuing to show up to work, understanding the imminent danger and risk of contracting the Covid-19 virus. To illustrate the impact of this virus clearly, Michael

Dewar, a cardiac surgeon in Connecticut wrote the following to the editor of the New York Times talking about nurses;

“She rises at 5:15 a.m., arrives in the Covid-19 unit by 7:15. Receives the handoff information from the night shift. She washes down, dons the yellow gown, shoe covers, hair cover, the N95 mask, gloves and the eye shield and enters the negative pressure room. Her distraught patient is coughing uncontrollably. She administers a breathing treatment along with some Tylenol and fluids, checks her oxygen saturation, delivers a message from her family and reassures her that she will get better. She leaves and repeats the process with her next patient. She does this for 12 hours. She goes home and disinfects before she greets her family, has some dinner and goes to bed. Rises at 5:15 and repeats the process, trying not to be discouraged by the patients who go on ventilators or don’t survive. The nurses never say no, they are always there, eight, 12, sometimes 15 hours a day, and then they do it again the next day and the next. They are the front line” (Dewar, 2020).

In addition to the experiences of nurses detailed by Dr. Dewar, statistics of infected healthcare workers are rising, and the recent deaths of two New York City nurses suggest many believe more fatalities are yet to come (Schwartz, 2020). Therefore, it would be inappropriate to try and conceptualize the toll the current pandemic is taking on workplace stress and the overall wellness of nurses, without consulting individuals actively engaged.

Next, demonstrating a moderate relationship between behaviors is that of co-worker support and healthy eating. It is well known that the work of ED nurses’ is often highly unpredictable, causing them to often skip breaks and/or meals in order to finish their work, so as to not overburden peers (Dawson et al., 2007). Researchers (Phiri et al., 2014) found that nurses frequently mentioned long working hours and being over tired from work causing a lack of time to prepare healthy meals. Buying fast foods was seen as the most convenient option, however in most cases it was also viewed as unhealthy (Phiri et al., 2014). In addition, nurses’ shift duties have also been positively associated with

abnormal eating habits, including preferring to eat cold and fast foods, choosing to ‘nibble’ instead of eating a full meal, and having fewer meals over the course of a 24-hour period (Morikawa et al., 2008).

In connection to co-worker support, research indicates eating habits are increasingly influenced by the workplace environment, which ultimately may contribute to overweight and obesity. A review of the current research finds that interactions with colleagues, being that meals are often shared, can both positively and negatively affect eating behaviors. During these shared meals, colleagues shared conversations about diet and exercise, ultimately strengthening motivation to implement healthier habits (Persson & Mårtensson, 2006; Phiri et al., 2014; Nicholls et al., 2017). Conversely, nurses were also influenced by colleagues to participate in eating junk food and social eating practices, which typically involved foods designated as ‘treats’ (e.g. cake and pizza; Persson & Mårtensson, 2006). In some instances, colleagues went as far as making others feel guilty for not participating in eating junk food (e.g. cake) that is regularly available (Phiri et al., 2014).

Present in the majority of health behavior change models is the construct of social support. The two broad categories of social support, structural and functional, are made evident within Emergency Departments in various capacities (Holt-Lunstad & Uchino, 2015). Given that the degree to which individuals are situated or integrated within a social network operates as the structural component of social relationships, a nurse’s role in the ED (e.g. charge nurse vs. staff nurse), experience, education and training, age, along with other demographic and external may have an effect. Measured by the specific objectives of relationships, and their ability to provide support or other resources, the

functional measures with Emergency Departments can be achieved with workplace health and wellness programs and trained personnel, workplace social support initiatives, and psychological support structures for individuals struggling with healthy eating, or other health behaviors.

Research Question 2: TPB Constructs and Intention

Within the current research, findings indicated a lack of correlation between Theory of Planned Behavior constructs and an individual's intention to change their behavior. However, significant correlation was found between Current Behaviors and two theoretical constructs: 1) Attitude and 2) Perceived Control, both of which are explored further.

Current Behaviors and Attitudes.

Within the current research, it was evident that this sample of ED nurses understood the importance of each measured health behavior. Comparing the results of both constructs, the mean of each health behavior is higher within the Attitudes subscale when compared to the Current Behavior subscale. For instance, the means for Adequate Rest were $M=3.70$ and $M=6.30$ and Mental Health means were $M=4.52$ and $M=6.52$, respectively. Based on these findings, trends are becoming apparent that this sample of ED nurse is aware of the importance of health behaviors, however, appear to not be regularly engaging. Engagement may be restricted due to access or other various environmental factors.

Exploring these differences further, research has indicated that quality of sleep may suffer when those who work various shifts try to sleep during irregular hours, as it fights the body's natural physiological function (Huth et al., 2013). Although nurses that

work night shifts report the same duration of sleep as their co-workers on day shifts, these individuals experience an increased number of interruptions in their sleep, which may contribute to a decrease in the quality of sleep they are experiencing (Geliebter et al., 2000). This is made evident by participants in the current sample who reported being unlikely to achieve the national recommendation of 7-9 hours of sleep a night.

Furthermore, 9 (39%) participants indicated they predominantly work the 12-hour night shift, potentially leading to further sleep disruptions than their 12 (56.5%) colleagues who reported predominantly working the 12-hour day shift. Although this sample indicated a low likeliness to regularly get adequate sleep, there was a strong response to how important participants viewed the health behavior. Given the percentage of this sample who work predominantly night shift, it is critical to recognize the disturbance in circadian rhythms this may cause. Research indicates that working strictly night shifts can interfere in the body's circadian rhythm, possibly, leading to the detrimental psychological effects. This in part is due to the responsibility of the circadian rhythm to regulate behavior and physiology at a biological level (West, Boughton, & Bymes, 2009). Recognizing the importance of behavior regulation among health care practitioners, it is crucial to elaborate on the startling difference between the current behavior and attitude towards mental health.

Encompassing the emotional, psychological and social well-being of individuals, it is easy to comprehend the struggle for many first responders to find balance within their mental health, as their needs are often second to those of their patient. Understood as a symptom of poor mental health, and predictor of depressive symptoms (Papathanasiou, 2015), burnout is becoming incredibly common among health care

professionals. For the purpose of this research, burnout was operationalized as feelings of negativism or increased mental distance from one's job (Brooks Carthon et al., 2020).

This increase in prevalence has been linked to numerous factors including, organizational factors, learning environment, practice environment, society and culture, personal factors, and rules and regulations (National Academy of Medicine, 2019). Specifically, among nurses, Aiken et. al (2002) found that within hospitals with higher patient-to-nurse ratios, nurses are more likely to experience high emotional exhaustion. Study results indicated that nurses with an 8:1 patient-to-nurse ratio would be 2.29 times as likely than nurses with a 4:1 patient-to-nurse ratio to experience symptoms of burnout. Research has linked clinician burnout to reduced quality of care (Canadas-De la Fuente et. al., 2014), increased likelihood of perceived medical error (Melnik et. al., 2018), increased turnover and reduction of work effort, and suboptimal patient outcomes (National Academy of Medicine, 2019). Schumacker's et al., (2019) research pertaining strictly to emergency, trauma, and transport nurses found that 12.9% of participants reported no burnout symptoms, 50% reported occasional stress, 26.7% reported definitely burning out, 8% indicate persistent symptoms, and 2.5% feel completely burned out.

With respect to the current research, it is informative to see study participants rated the awareness of mental health among the highest health behaviors within the Attitude scale, proving that it is of great importance to this sample. However, the Current Behavior subscale indicates a less than ideal current mental health climate among this sample.

Current Behaviors and Perceived Control.

Perceived behavioral control was added to the Theory of Reasoned Action in an effort to recognize the presence of factors outside of an individual's control that may affect their motivation or intention, thus forming the Theory of Planned Behavior (Montano & Kasprzyk, 2015). This additional component has become exceedingly important in the measurement of various health behaviors, including exercise behaviors (Conn et al., 2003), alcohol consumption (Collins et al., 2011), safe sex practices (Asare, 2015), gambling practices (Martin et al., 2010); and diabetes management (Lee, Bowen, Mosley, & Turner, 2017). For the purpose of the current research, this construct helped to understand this samples' belief of control in relation to both co-worker and supervisor support.

Originally, one item categorized as 'workplace support', expert panelists responsible for conducting the CVI, indicated that individuals can feel supported by co-workers but not by supervisors, therefore, the two constructs are not necessarily synonymous. For instance, in this sample participants felt mostly supported by co-workers, and yet support from supervisors was rated as moderately low. However, within the Attitude subscale, participants indicated the importance of being supported by both co-coworkers and supervisors. Nonetheless, this sample indicated having minimal control over feeling supported by with co-workers or supervisors.

Similar to factors associated with workplace stress, patient violence, discrimination, conflict with physicians, uncertainty concerning treatment, and various other factors, all affect a nurse's evaluation of support. Employees need to believe that they are supported in the decisions they make, as evidenced by the fact that when staff are given the appropriate education and support, there is a higher prevalence of individual workplace success (Stene et al., 2015). Furthermore, the well-being of clinicians has been shown to have a direct link to crucial healthcare outcomes, such as patient safety and quality of care (Stimpfel et al., 2019).

Nonetheless, workplace bullying has proven to be a workplace issues within nursing, thereby directly affecting clinician well-being (Hutchinson, Wilkes, Jackson, & Vickers, 2010). According to researchers, bullying has been linked to increased burnout (Allen et al., 2015), mental health symptoms including anxiety and fatigue (Reknes et al., 2014), and individual resolve to leave an organization (Sauer & McCoy, 2018). Similarly, Schumacker et al., (2020) found that 24.4% of participants frequently think about quitting and 25.7% have low or very low perceived organizational support scores.

Research conducted with ICU nurses, who possess similar characteristics to ED nurses, employed a ‘Me, We, Us’ approach (Jarden & Jarden, 2016) in order to understand the steps necessary for strengthening workplace well-being. Results suggested that participants were looking for a positive interventions and collaborations among the entirety of the team, a supportive team environment, and effective communication from a co-worker perspective. From the organizational and supervisor standpoint, participants were looking for both formal and informal debriefings, front line clinical supervision, and functions in place to promote work-life balance (e.g. not be harassed to work overtime on days off). Given the findings of the current study, perceived control with regards to feelings of support may increase among this population with interventions focused on addressing the disconnect between the expectations of staff nurses and supervisors.

Implications

On March 11, 2020 the WHO announced that COVID-19, a viral respiratory disease originating Wuhan, China in late 2019, was officially a pandemic that is “characterized by human-to-human spread of the virus into at least two countries in one WHO region... [and] community level outbreaks in at least one other country in a different WHO region” (WHO, 2009, p. 25-26). Due to the effect of COVID-19 on

healthcare, emergency departments in particular, data collection was postponed in order to not impede on the time and energy of nurses. Although, based on the sample size, trends within the findings can be determined. At the forefront lies a common trend within nursing research; the role of nurses as health educators and examples of positive health behaviors. Education, in addition to the reduction of negative health behaviors, as a means to support individual behavior change in patients, is perceived as a fundamental role for the majority of nurses (Kelly et al., 2017b). In recent years, there has been an increase in the expectation of healthcare professionals to effectively incorporate health promotion methods and processes into their clinical practices (Kelly et al., 2017a). Therefore, there needs to be better understanding of how healthy behaviors are role modeled, as it is currently viewed as an individual preference rather than a professional duty.

Highlighted within the current research is the rate of obese and overweight practicing nurses. According to some research, the majority of practicing nurses are overweight (Allison, 2005; Han et al, 2012; Miller et al., 2008). Therefore, one may wonder if, within the professional nursing role, the overweight and/or obese nurse is an effective educator for patients on the health risks of obesity or health concerns.

Additionally, of concern among nurses is the rate of burnout. Leading to higher rates of mental illness, job departure, and suicide, clinician burnout is a large focus for many organizations. Both issues, obesity and burnout lead to similar concerns; inability to perform job requirements effectively, reduced patient care, and reduction in patient adherence to medical advice. In addition, both affect a nurse's ability to serve as an effective health promotor.

If health promotion is viewed as a vital component of nursing, there is a need to explore the disconnect between understood fundamental roles of nurses and the education provided to instill behaviors within their practice. The current research assists in highlighting the divide between current behaviors, attitudes, and individuals' perceived control of the identified health behaviors. The implementation of workplace educational opportunities, developed in collaboration with nurses to ensure appropriate content, offers the opportunity for continuing education that looks to benefit both the clinician and their patients. Furthermore, educational offerings may in turn lead to the development and implementation of collaborative workplace support programs (e.g. subsidized gym memberships, or, healthy eating workshops facilitated by a current or former shift worker). Participants within the current research provide a glimpse into the need for design and implementation of multi-level workplace initiatives addressing clinician health behaviors.

Based on the findings of the current study, in conjunction with prior research, it is imperative to highlight the systematic errors responsible for intensifying the stress experienced by ED nurses within organizational structures. Modifications to structures and processes that would allow for delivery of care to be maintained while simultaneously decreasing the stress load on nurses need to be explored. Although government programs exist as incentives for hospitals to prioritize quality of care (e.g. Value Based Purchasing Program), institutions with high rates of clinician burnout score are often unsuccessful due 30% of the Total Performance Score comprised from patient satisfaction (Brooks Carthon et al., 2020).

Although healthcare systems are working to implement system-level programs to improve burnout, most of the work has been focused on physicians (West et al., 2016). While working to change that, nurses identified the highest proportions of shortages of skills and abilities among peers including, stress management (63.7%), critical-thinking skills (52.1%), clinical knowledge and skills (43.7%), decision-making under pressure (43.0%), time management (40.5%), leadership (39.8%), and mentorship (39.5%) (Schumacker et al., 2020). Furthermore, nurses identified training on specific equipment (39.2%), leadership/management training (38.5%), crisis management training (33.1%), stress management (32.3%), and workplace violence/incivility/ bullying education (30.1%) as types of training that are most necessary. It is incredibly apparent that more needs to be done for nurses as they are a critical, if not the most critical, component of the medical structure. The aforementioned trainings coupled with funding for professional development, resources beyond counseling for addressing stress and burnout, regular one-on-one communication with nurse leaders, and appropriate staffing numbers will help to build a work environment where nurses feel supported, valued, and heard.

Limitations

Due to a technological error in the survey collection software, data collection had to be stopped, and restarted resulting in the potential loss of initial participants and a sample size that is smaller than expected. However, given the limited research on Emergency Department nurses, in addition to the results from the current research amplifying the previous limited research, it is reasonable to assume that any sample size is beneficial.

Recommendations for Future Research

Further research is recommended to increase the sample size of this study in order to obtain a more accurate representation of the studied demographic. Additionally, further

research is essential in understanding the implications of health behaviors such as coworker and supervisor support on other health behaviors, both when present and absent. Furthermore, following the COVID-19 pandemic, research pertaining to the effect of the circumstances on workplace stress and mental health can help develop resiliency training and performance psychology programs, healthcare provider specific, to help prepare for future events. In addition, systematic errors responsible for intensifying the stress experienced by ED nurses should be investigated. Finally, although minimal research already exists, the trends of the current research indicate that more information is needed regarding the role of nurses as health educators and the opportunities for training and education available to make that possible.

APPENDICES

Appendix A – Original Scale

External Factors

1. Do you eat healthy meals?
 - a. Yes
 - b. No

2. Do you get adequate rest?
 - a. Yes
 - b. No

3. Do you participate in regular physical activity?
 - a. Yes
 - b. No

4. How stressful is your work on a scale of 1-7?
 - a. 1 – Not Stressful
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Stressful

5. How do you rate your mental wellness on a scale of 1-7?
 - a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important

6. On a scale of 1-7, how supported do you feel in your workplace?
 - a. 1 – Not Supported
 - b. 2
 - c. 3
 - d. 4

- e. 5
- f. 6
- g. 7 – Very Supported

Behavioral/ Attitude Belief Questions

7. On a scale of 1-7, how important for you think it is for ER nurses to get a good night's sleep (7-8 hours)?
 - a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important

8. On a scale of 1-7, how important do you think it is for ER nurses to eat healthy meals?
 - a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important

9. On a scale of 1-7, how important do you think it is for ER nurses to eat participate in regular physical activity?
 - a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important

10. On a scale of 1-7, how important do you think it is for ER nurses to be supported in the workplace?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
11. On a scale of 1-7, how important do you think workplace stress is for ER nurses?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
12. On a scale of 1-7, how important do you think it is for ER nurses to be aware of mental wellness?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
13. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to get a good night's sleep?
- a. 1 – Not Important
 - b. 2
 - c. 3
14. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to eat healthy meals?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
15. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to participate in regular physical activity?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
16. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to feel supported in the workplace?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important

Normative Belief Questions

13. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to get a good night's sleep?
- a. 1 – Not Important
 - b. 2
 - c. 3

17. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think workplace stress is for ER nurses?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

18. On a scale of 1-7, how important do you think YOUR ER nurse colleagues think it is to be aware of mental wellness?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

Control Belief Question

19. On a scale of 1-7, how much control do you think you have to get a good night's sleep?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

20. On a scale of 1-7, how much control do you think you have to eat healthy meals?

- a. 1 – Not Important
- b. 2

c. 3

d. 4

e. 5

f. 6

g. 7 – Very Important

21. On a scale of 1-7, how much control do you think you have to participate in regular physical activity?

a. 1 – Not Important

b. 2

c. 3

d. 4

e. 5

f. 6

g. 7 – Very Important

22. On a scale of 1-7, how much control do you think you have to feel supported in your workplace?

a. 1 – Not Important

b. 2

c. 3

d. 4

e. 5

f. 6

g. 7 – Very Important

23. On a scale of 1-7, how much control do you think you have in experiencing workplace stress?

a. 1 – Not Important

b. 2

c. 3

d. 4

e. 5

f. 6

g. 7 – Very Important

24. On a scale of 1-7, how much control do you think you have over your own mental wellness?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

- c. American Indian or Alaska Native
- d. Asian
- e. Native Hawaiian or Pacific Islander
- f. Hispanic
- g. Other: Specify

Intention Question

25. Within the next 30 days what are your intentions to make at least one change in your lifestyle to promote health and wellness RE: sleep, diet, exercise, meditation/yoga, etc
- Open ended

Demographic Questions

- 1. Gender
 - a. Female
 - b. Male

- 2. Age (years)
 - a. 20-29
 - b. 30-39
 - c. 40-49
 - d. 50-59
 - e. < 60

- 3. Ethnic Origin
 - a. White
 - b. Black or African American

- 4. Marital Status
 - a. Married
 - b. Divorced
 - c. Widowed
 - d. Separated
 - e. Never Married

- 5. Highest degree of nursing education
 - a. PhD
 - b. Masters
 - c. Postgraduate Diploma
 - d. Bachelors

- 6. Licensure Level
 - a. Nurse Manager or Nurse Supervisor
 - b. Nurse Practitioner
 - c. Advanced Practice Registered Nurse
 - d. Registered Nurse

- 7. What shift do you predominantly work?
 - a. Day
 - b. Night

Appendix B – Revised Scale

Current Behavior Questions

1. ****Note:** National Recommendations for healthy eating are as follows:
(For Women: 1.5 – 2 cups of fruit, 2-2.5 cups of vegetables, and 5-5.5 ounce equivalents of proteins daily.
For Men – 2 cups of fruit, 2.3-3 cups of vegetables, and 5.5-6.5 ounce equivalents of proteins daily.)

How likely are you to regularly eat healthy meals, based on National Recommendations?

- a. 1 – Never
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Likely
2. ****Note:** National Recommendations for sleep are 7-9 hours per night.
How likely are you to regularly get enough sleep, based on National Recommendations?
- a. 1 – Never
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Likely

3. ****Note:** ****Note** National Recommendations for physical activity are as follows:
Adults should do at least 2 hours and 30 minutes to 5 hours a week of moderate-intensity, or 1 hour and 15 minutes to 2 hours and 30 minutes a week of vigorous-intensity aerobic physical activity

How likely are you to participate in regular physical activity, based on National Recommendations?

- a. 1 – Never
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Likely
4. On a scale of 1-7, how stressful is your work?

- a. 1 – Not Stressful
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Stressful
5. On a scale of 1-7, how would you rate your mental health?
- a. 1 – Very Negative
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Positive
6. On a scale of 1-7, how would you rate your social, occupational, environmental, emotional, physical, spiritual, and intellectual wellness?
- a. 1 – Very Negative
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Positive
7. On a scale of 1-7, how supported do you feel by co-workers in your work place?
- a. 1 – Not Supported
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Supported
8. On a scale of 1-7, how supported do you feel by your supervisors in your work place?
- a. 1 – Not Supported
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Supported

Attitude Questions

9. ****Note:** National Recommendations for healthy eating are as follows:
(For Women: 1.5 – 2 cups of fruit, 2-2.5 cups of vegetables, and 5-5.5 ounce equivalents of proteins daily.
For Men – 2 cups of fruit, 2.3-3 cups of vegetables, and 5.5-6.5 ounce equivalents of proteins daily.)

On a scale of 1-7, how important is it for YOU to eat healthy meals?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

10. ****Note:** National Recommendations for sleep are 7-9 hours per night.

On a scale of 1-7, how important is it to YOU to get a good night's sleep?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

11. ****Note:** National Recommendations for physical activity are as follows:
Adults should do at least 2 hours and 30 minutes to 5 hours a week of moderate-intensity, or 1 hour and 15 minutes to 2 hours and 30 minutes a week of vigorous-intensity aerobic physical activity

On a scale of 1-7, how important is it for YOU to participate in regular physical activity?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

12. On a scale of 1-7, how important is it for YOU to be able to manage workplace stress?

- a. 1 – Not Important

- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very Important

13. On a scale of 1-7, how important is it for YOU to be aware of your mental health?

- a.** 1 – Not Important
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very Important

14. On a scale of 1-7, how important is it for YOU to be aware of your social, occupational, environmental, emotional, physical, spiritual, and intellectual wellness?

- a.** 1 – Not Important
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very Important

15. On a scale of 1-7, how important is it for YOU to be supported by co-workers in the workplace?

- a.** 1 – Not Important
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very Important

16. On a scale of 1-7, how important is it for YOU to be supported by supervisors in the workplace?

- a.** 1 – Not Important
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very Important

Subjective Norm Questions

17. **Note: National Recommendations for healthy eating are as follows:

(For Women: 1.5 – 2 cups of fruit, 2-2.5 cups of vegetables, and 5-5.5 ounce equivalents of proteins daily.

For Men – 2 cups of fruit, 2.3-3 cups of vegetables, and 5.5-6.5 ounce equivalents of proteins daily.)

On a scale of 1-7, how important do you believe your Emergency Department **NURSE COLLEAGUES** think it is to eat healthy meals?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

18. ** Note: National Recommendations for sleep are 7-9 hours per night.

On a scale of 1-7, how important do you think your Emergency Department **NURSE COLLEAGUES** think it is to get a good night's sleep?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

19. **Note: National Recommendations for physical activity are as follows:

Adults should do at least 2 hours and 30 minutes to 5 hours a week of moderate-intensity, or 1 hour and 15 minutes to 2 hours and 30 minutes a week of vigorous-intensity aerobic physical activity

On a scale of 1-7, how important do you believe your Emergency Department **NURSE COLLEAGUES** think it is to participate in regular physical activity?

- a. 1 – Not Important
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7 – Very Important

20. On a scale of 1-7, how important do you believe your Emergency Department **NURSE COLLEAGUES** think it is to be able to manage workplace stress?

- a. 1 – Not Important

- b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
21. On a scale of 1-7, how important do you believe your Emergency Department NURSE COLLEAGUES think it is to be aware of mental health?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
22. On a scale of 1-7, how important do you believe your Emergency Department NURSE COLLEAGUES think it is to be aware of overall social, occupational, environmental, emotional, physical, spiritual, and intellectual wellness?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
23. On a scale of 1-7, how important do you believe you Emergency Department NURSE COLLEAGUES think it is to feel supported by co-workers in the workplace?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very Important
24. On a scale of 1-7, how important do you believe you Emergency Department NURSE COLLEAGUES think it is to feel supported by supervisors in the workplace?
- a. 1 – Not Important
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6

- g.** 7 – Very Important

Perceived Control Questions

25. **Note: National Recommendations for healthy eating are as follows:

(For Women: 1.5 – 2 cups of fruit, 2-2.5 cups of vegetables, and 5-5.5 ounce equivalents of proteins daily.

For Men – 2 cups of fruit, 2.3-3 cups of vegetables, and 5.5-6.5 ounce equivalents of proteins daily.)

On a scale of 1-7, how much control do you think you have over your ability to eat healthy meals?

- a.** 1 – No Control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very High Control

26. **Note: National Recommendations for sleep are 7-9 hours per night.

On a scale of 1-7, how much control do you think you have over your ability to get a good night's sleep? (7-9 hours)

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

27. **Note: National Recommendations for physical activity are as follows: Adults should do at least 2 hours and 30 minutes to 5 hours a week of moderate-intensity, or 1 hour and 15 minutes to 2 hours and 30 minutes a week of vigorous-intensity aerobic physical activity

On a scale of 1-7, how much control do you think you have over your ability to participate in regular physical activity?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

28. On a scale of 1-7, how much control do you think you have in your ability to manage workplace stress?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

29. On a scale of 1-7, how much control do you think you have over your own mental health?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

30. On a scale of 1-7, how much control do you think you have over your own social, occupational, environmental, emotional, physical, spiritual, and intellectual wellness?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

31. On a scale of 1-7, how much control do you think you have to feel supported by co-workers in your workplace?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4
- e.** 5
- f.** 6
- g.** 7 – Very high control

32. On a scale of 1-7, how much control do you think you have to feel supported by supervisors in your workplace?

- a.** 1 – No control at all
- b.** 2
- c.** 3
- d.** 4

- e. 5
- f. 6
- g. 7 – Very high control

Intention Question

33. Within the next 30 days what are your intentions to make at least one change in your lifestyle to promote health behaviors RE: sleep, diet, exercise, meditation/yoga, etc.?
- a. 1 – No Intentions
 - b. 2
 - c. 3
 - d. 4
 - e. 5
 - f. 6
 - g. 7 – Very High Intentions

Demographic Questions

34. What is your gender identity?
- a. I am a man
 - b. I am a woman
 - c. I am genderqueer
 - d. I am something else: _____

- e. Native Hawaiian or Pacific Islander
- f. White
- g. Other: Specify
- h. Refuse to Answer

35. Does your gender identity match the sex you were assigned at birth?
- a. Yes (cisgender)
 - b. No (transgender)
 - c. Other: _____

38. Marital Status

- a. Single (never married)
- b. Married, or in a domestic partnership
- c. Widowed
- d. Divorced
- e. Separated

36. What is your age?
- a. 20 - 24
 - b. 25 – 34
 - c. 35 – 44
 - d. 45 – 54
 - e. 55 – 64
 - f. 65 +

39. Highest degree of nursing education

- a. Doctoral Degree in Nursing
- b. Masters
- c. Bachelors
- d. Diploma
- e. Associate Degree

37. Which one or more of the following would you say is your race?
- a. American Indian or Alaska Native
 - b. Asian
 - c. Black or African American
 - d. Hispanic

40. ED Role (check all as appropriate)

- a. Nurse Manager/ Director
- b. Nurse Educator
- c. Advanced Practice Registered Nurse (NP)
- d. Charge Nurse
- e. Staff Nurse

41. What shift do you predominantly work?

- a.** Day
- b.** Night

42. Board Certified in a Specialty Area such as an Emergency Nurse (CEN).

- a.** Yes
- b.** No
- c.** In Progress

43. Are you seeking advanced education (seeking additional degree or certificate)?

- a.** Yes
 - i.** Please specify what degree or certificate you are seeking

b. No

c. In progress

- 1.** If yes is checked, ask to specify what degree or certificate they are seeking

44. How long have you been an RN?

- a.** 1- 3 years
- b.** 4 – 6 years
- c.** 7– 9years
- d.** 10+

45. How long have you been an ED Nurse?

- a.** 1- 3 years
- b.** 4 – 6 years
- c.** 7– 9years
- d.** 10+

Appendix C: Literature Review

Wellness of Nurses

The National Wellness Institute defines wellness as “an active process through which people become aware of, and make choices toward, a more successful existence” (Institute, 2006). This active process is seen as a holistic and multi-dimensional, inclusive of seven different dimensions [Figure 1]: physical, emotional, intellectual, social, environmental, intellectual, social, environmental, spiritual, and occupational (B Hettler, 1976; Swarbrick, 2006). Therefore, in order to understand the fundamental difference between health and wellness, it is imperative that health is understood as a state of being that refers to the physical, mental, and social well-being, whereas wellness is the investment in living a healthy lifestyle in order to improve overall well-being (Stoewen, 2015).

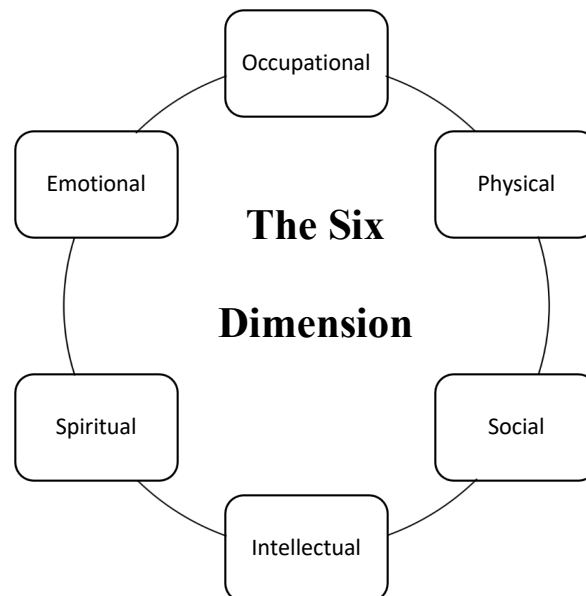


Figure 2. The Six Dimensions of Wellness Model. Adapted from Hettler, B. (1976). The six dimensions of wellness. Retrieved from <http://www.hettler.com/sixdimen.htm>.

Physical.

Within the physical dimension, physical development encourages developing habits and making decisions related to healthy eating, regular physical activity, avoiding the use of tobacco, drugs and excessive consumption of alcohol, and recognizing the signs and symptoms of illness and disease (B. Hettler, 1980; Robertson & Sweatman, 2012). Success within the physical dimension, such as looking and feeling good have the potential to produce psychological rewards of enriched self-esteem, self-control, motivation, and determination (B. Hettler, 1980). As seen above, the majority of nurses are overweight (Miller et al., 2008; Zapka et al., 2009), and fail to eating the recommended portions of fruit and vegetables per day (Blake & Patterson, 2015). In turn, researchers have found that patients may ignore advice from nurses whose unhealthy physical behaviors contradict their health promotion practice (Speroni et al., 2012).

Emotional.

Often dependent on other components of wellness, emotional wellness emphasizes the degree to which and individual is able to recognize and accept their feelings and emotions (B. Hettler, 1980; Robertson & Sweatman, 2012). Included within this dimension is the capacity to monitor ones thoughts and feelings related to a realistic evaluation of their limitations, growth towards autonomy, and identifying barriers to ensure effective coping with stress (B. Hettler, 1980; Robertson & Sweatman, 2012). According to B. Hettler (1980) a fundamental mean of wellness is the awareness and tolerance of a wide scope of feeling within one's self, and others.

Intellectual.

Constantly engaged in the learning process, the intellectual wellness dimension acknowledges one's ability to process and use information effectively for development in various areas, for instance, personal life, family, and career (B. Hettler, 1980; Robertson & Sweatman, 2012). Following an extensive review, Roscoe (2009) defines intellectual wellness as an individual's discernment of, and motivation for, engaging in an optimal level of stimulating intellectual activity. This level of activity is for the personal growth of the individual, achieved through the continuous acquisition, sharing, and application of knowledge (Roscoe, 2009).

Social.

In contrast to other researchers, Adams, Bezner, and Steinhardt (1997) conceptualized social wellness as being focused more on interactions had by individuals, in place of the individual relation to the community or environment. Therefore, Adams et al. (1997) define social wellness as the quantity and quality of support both received and reciprocated, and the value attached to the accompanying actions. Durlak (2000) expands the dimension further, offering social wellness competencies which include: peer acceptance, altruism, attachments/bonds with others, and social skills.

Environmental.

Although the work of B. Hettler (1980) contributed to the expansion of the wellness model to include environmental wellness, according to Roscoe (2009) it lacked the appropriate distinction of what is traditionally considered to be an environmental concern (e.g. pollution and conservation). Within their interpretation of the wellness

model, Renger et al. (2000) included environmental wellness as a distinct dimension. The authors operationalized the dimension to include the balance between life at home and life at work, and how they impact each other, as well as an individual's personal relationship with nature and resources in the community (Renger et al., 2000; Roscoe, 2009). In essence, environmental wellness includes the efforts an individual commits to improving the environment and community and the reciprocal interaction that transpires, as well as the magnitude of control over the environment one possesses (Roscoe, 2009).

Spiritual.

As the most well-defined and explored dimension of wellness, spiritual wellness has been the focus of many authors, in addition to concepts such as spiritual well-being and spiritual health (Roscoe, 2009). Even though there is an extensive amount of literature pertaining to spiritual wellness, key aspects of spiritual wellness include a recurrent process of searching for, and discovering meaning in life relative to others; the self as it relates to others, the larger community, nature, and potentially a higher power; and the formation of a personal ideology, values and beliefs system (Adams et al., 1997; B. Hettler, 1980; Renger et al., 2000; Roscoe, 2009).

Occupational.

Within his conceptualization of wellness theory, B. Hettler (1980) included occupational wellness, unlike colleagues Adams et al. (1997) and Renger et al. (2000), and operationalized the construct as the amount of satisfaction and enrichment one could gain from their work, and the degree to which an individual's occupation allows expression of personal values. Also included within this definition is the contributions of

skill and talents an individual makes to the community, to be rewarded meaningfully through either financially compensated work, or not (B. Hettler, 1980). Combining the work of Trinkoff, Geiger-Brown, Brady, Lipscomb, and Muntaner (2006), Crose, Nicholas, Gobble, and Frank (1992), and B. Hettler (1980) occupational wellness integrates the degree to which one can express individual values, the attitude an individual holds towards work and their ability to remain poised while balancing numerous roles, and the ways an individual utilizes the skills and abilities they possess to play a part in the community.

Health Behaviors of Nurses

As seen in an aforementioned section, researchers are noticing a higher rate of burnout among medical professionals due to numerous factors including, organizational factors, learning environment, practice environment, society and culture, personal factors, and rules and regulations (National Academy of Medicine, 2019). Specifically, among nurses, Aiken et. al (2002) found that within hospitals with higher nurse-to-patient ratios nurses are more likely to experience high emotional exhaustion. Study results indicated that nurses with an 8:1 patient-to-nurse ratio would be 2.29 times as likely than nurses with an 4:1 patient-to-nurse ratio to experience symptoms of burnout. Research has linked clinician burnout to reduced quality of care (Canadas-De la Fuente et. al., 2014), increased likelihood of perceived medical error (Melnyk et. al., 2018), increased turnover and reduction of work effort, and suboptimal patient outcomes (National Academy of Medicine, 2019). In a Health Risk Appraisal (HRA) conducted by the American Nurses Association (ANA, 2016), 82% of respondents said they were at a “significant level of

risk for workplace stress”, while 68% of respondents reported putting the health, safety, and wellness of their patients before their own.

Based on a review completed by McVicar (2003), and previous works (Williams, Michie, & Pattani, 1998) workplace stressors identified by nurses include workload, leadership/ management issues, professional conflict and emotional demands of caring. Furthermore, the works of McGowan (2001) and Shader, Broome, Broome, West, and Nash (2001) emphasized workplace stress to be greater on today’s workforce. Researchers believe this suggests the stress from the recognized sources has increased, and/or supplementary sources are subsidizing the growing effects (McVicar, 2003). As work place stress increases for nurses, it is vital to recognize the physiological effects of consistent reactivation of stress pathways.

As stated above, a stress response is initiated when an actual or perceived threat activates the sensory and higher reasoning centers in the cortex. The cortex then sends a message to the amygdala – command center for the body (Lox, Martin Ginis, & Petruzzello, 2010). The amygdala, thought to be the primary site responsible for initiating a stress response, activates the hypothalamus (Lox et al., 2010). The lateral hypothalamus activates the sympathetic nervous system (SNS) via the splanchnic nerve, thus innervates the adrenal medulla (Lox et al., 2010). This process activates the release of catecholamines epinephrine [E] and norepinephrine [NorE] (Lox et al., 2010). The paraventricular nucleus of the hypothalamus releases corticotropin releasing hormone [CRH], which stimulates the pituitary gland (Lox et al., 2010). This causes the release of adrenocorticotropin releasing hormone [ACTH], which activates the adrenal cortex to initiate the release of cortisol (Lox et al., 2010). Both the catecholamines and the cortisol

stimulate the “fight-or-flight” response, preparing the body for handling the presented stressor. Chronic stress leads to the reactivation of stress pathways. Researchers have found that overproduction of cortisol, due to constant stress, has been linked to depression, panic disorder, anorexia nervosa, chronic fatigue syndrome, fibromyalgia, headaches, heart disease, sleep problems, weight gain, memory and concentration problems, digestive problems, and anxiety (Lox et al., 2010; Mayo Clinic Staff, 2019).

Stress factors.

Typically, stress is defined from a ‘demand-perception-response’ perspective, relating to an individual’s perceptions of the demand being made of them, and their own perception of possessed capabilities to meet those demands (McVicar, 2003). An inconsistency in perception and perceived abilities will trigger a stress response. According to McVicar (2003) and Dawson et al. (2007), high stress levels are a significant health problem for nurses. More specifically, McVicar (2003) found that reported sources of stress for nurses may change as great emphasis is put on conditions of employment (i.e. pay, shift work scheduling, etc.), however they are likely to be added to previously reported sources of stress, rather than replace. Meanwhile, the work of Phillips (1996) concluded that the high level of skill required in nursing, along with the range of situations requiring teamwork, 24-hour delivery of care, and what is often referred to as ‘emotional labour’ combined for potential workplace stressors. French, Lenton, Walters, and Eyles (2000) indicated nine sub scales of workplace stress that could hypothetically impact nurses. In no specific orders, the scales are: conflict with physicians, inadequate preparation, problems with peers, problems with supervisor, discrimination, workload,

uncertainty concerning treatment, dealing with death, and dying patients, patients/their families.

Based on a review completed by McVicar (2003), and previous works (Williams, Michie, & Pattani, 1998) workplace stressors identified by nurses include workload, leadership/management issues, professional conflict and emotional demands of caring. Furthermore, the works of McGowan (2001) and Shader, Broome, Broome, West, and Nash (2001) emphasized workplace stress to be greater on today's workforce. Researchers believe this suggests the stress from the recognized sources has increased, and/or supplementary sources are subsidizing the growing effects (McVicar, 2003). As work place stress increases for nurses, it is vital to recognize the physiological effects of consistent reactivation of stress pathways.

As stated above, a stress response is initiated when an actual or perceived threat activates the sensory and higher reasoning centers in the cortex. The cortex then sends a message to the amygdala – command center for the body (Lox, Martin Ginis, & Petruzzello, 2010). The amygdala, thought to be the primary site responsible for initiating a stress response, activates the hypothalamus (Lox et al., 2010). The lateral hypothalamus activates the sympathetic nervous system (SNS) via the splanchnic nerve, thus innervates the adrenal medulla (Lox et al., 2010). This process activates the release of catecholamines epinephrine [E] and norepinephrine [NorE] (Lox et al., 2010). The paraventricular nucleus of the hypothalamus releases corticotropin releasing hormone [CRH], which stimulates the pituitary gland (Lox et al., 2010). This causes the release of adrenocorticotropin releasing hormone [ACTH], which activates the adrenal cortex to initiate the release of cortisol (Lox et al., 2010). Both the catecholamines and the cortisol

stimulate the “fight-or-flight” response, preparing the body for handling the presented stressor. Chronic stress leads to the reactivation of stress pathways. Researchers have found that overproduction of cortisol, due to constant stress, has been linked to depression, panic disorder, anorexia nervosa, chronic fatigue syndrome, fibromyalgia, headaches, heart disease, sleep problems, weight gain, memory and concentration problems, digestive problems, and anxiety (Lox et al., 2010; Staff, 2019).

Irregular meal schedule.

Nurses’ work is often highly unpredictable, causing them to often skip breaks and/or meals in order to finish their work, as to not overburden peers (Dawson et al., 2007). In a qualitative study of nurses conducted by Phiri et al. (2014), nurses frequently mentioned long working hours and being over tired from work causing a lack of time to prepare healthy meals. Buying fast foods was seen as the most convenient option, however in most cases it was unhealthy (Phiri et al., 2014). Shift duties have also been positively associated with abnormal eating habits among nurses, such as preferring to eat cold and fast foods, choosing to ‘nibble’ instead of eating a full meal, and having fewer meals over the course of a 24-hour period (Morikawa et al., 2008).

Nahm et al. (2012) reasons that some nurses may turn to consuming large amounts of comfort food, and then sleeping or resting following their shift. This can be a key contributor to weight gain. Additionally, participants from the aforementioned study conducted by Phiri et al. (2014), both management and day shift nurses recognized that the food available within the hospital cafeteria was predominately unhealthy (i.e. fried chicken, french fries, and pastries). Further reasoning for choosing unhealthy food

options was related to cost; healthier options such as fruit and salad were more expensive (Phiri et al., 2014).

Work Schedule.

Standard shifts for nurses are eight or 12 hours, however these long working hours in addition to rotating shift work have been repeatedly addressed as obstacles towards nurses' engaging in healthy behaviors (Keller, 2009; Lamond et al., 2003). According to a report published by the Institute of Medicine (IOM), the actual work times of nurses' exceeded the scheduled work times by more than one hour per day, on average (Medicine, 2004b). Researchers have found that increased hours in the work environment, particularly one with high physical and psychosocial burdens, can cause adverse effects (Trinkoff et al., 2006). Specifically, the results indicated that shifts of 12 hours or more of continuous work were correlated with higher rates of reported fatigue and a decline in work performance (Trinkoff et al., 2006).

Rotating shifts present a greater number of negative effects for older nurses related to both normal aging changes, and reduced capability to readjust circadian rhythms with changing sleep patterns (Lamond et al., 2003; Nahm et al., 2012). A systematic review conducted by Muecke (2005), revealed that fatigued nurses, in particular those over the age of 40, may not work at optimal levels of performance during the latter hours of a night shift, following the accumulation of successive night shifts as fatigue sets in. According to researchers (Borges & Fischer, 2003; Trinkoff et al., 2006) an extended work schedule can lead to deficits in performance and reaction time, as a result of the physical demands an individual may be exposed to (Trinkoff et al., 2006). In addition, an extended work schedule can also lead to fatigue, one of the most common

concerns associated with shift work and extended duration shifts (Keller, 2009). Mental fatigue due to mental overload, or physical fatigue can all be classified as ‘acute fatigue’ (Keller, 2009). Long-term, or prolonged fatigue, is irreversible and is not responsive to worker compensation mechanisms (Keller, 2009). Therefore, as Muecke (2005) details, this raises concerns about the health and safety of nurses, as well as the potential detrimental effects of fatigue on the safety and care of patients. Reid, Roberts, and Dawson (1997) describe work performance related to disrupted sleep, due to work schedule, and include “slowing reaction time; delaying responses; failing to respond at the correct time; giving false responses; and causing slowed thinking and diminished memory” (p. 442).

Physical Activity.

The U.S. Department of Health and Human Services (Olson et al., 2018) recommends that adults engage in at least 150 minutes to 300 minutes a week of moderate-intensity, or 75 minutes to 150 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Despite working long hours and performing physically demanding tasks, nurses in a study conducted by Nahm et al. (2012) did not feel as though they were getting enough exercise. Furthermore, in spite of serving as patient educators for healthy behaviors and a practical approach for implementation, the majority of practicing nurses are overweight (Allison, 2005; Miller et al., 2008). Therefore, as Miller et al. (2008) contends, one has to wonder if within the professional nursing role, the overweight and/or obese nurse is an effective educator for patients on the health risks of obesity. Nurses, on average, are quite active during their shift, walking between four and five miles during a

12-hour shift (Welton, Decker, Adam, & Zone-Smith, 2006). In a study conducted by Welton et al. (2006) of medical-surgical nursing units, the mean distance walked by RN's (N = 146) during a 12-hour shift was 8748 ± 2953 steps (4.1 ± 1.4 miles). Regardless of the number of steps they walk during their shift, many nurses report getting a lack of exercise (Nahm et al., 2012).

Quality of Sleep.

Quality of sleep may suffer when those who work various shifts try to sleep during irregular hours, as it fights the body's natural physiological function (Huth, Eliades, Handwork, Englehart, & Messenger, 2013). Although they report the same duration of sleep as their co-workers on day shifts, individuals working night shift experience an increased number of interruptions in their sleep, which may contribute to a decrease in the quality of sleep they are experiencing (Geliebter, Gluck, Tanowitz, Aronoff, & Zammit, 2000). In addition, secretion of corticosteroids and adrenaline during the day are normal to promote wakefulness, whether or not a person is awake or sleeping (Kudielka, Buchtal, Uhde, & Wüst, 2007). Moreover, working strictly night shift or rotating shifts, interferes with the body's circadian rhythm and can produce detrimental psychological effects, as the circadian rhythm is responsible for the regulation of behavior and physiology at biological levels (West, Boughton, & Byrnes, 2009).

Fundamental to the sleep function in humans is the circadian rhythm which is coordinated by the endogenous clock, responsible for coordinating the molecular clock within the rest of the body, which is referred to as the master circadian pacemaker (Stevens et al., 2011). The master circadian pacemaker is located in the suprachiasmatic nucleus of the hypothalamus, the location in the structure of the brain where the nervous

system is linked to the endocrine system (Silver & Rainbow, 2013). A shift in the timing of work will cause a desynchronization of the master circadian pacemaker, affecting the processes on light pattern, but also those independent of light (Stevens et al., 2011). The desynchronization can continue for a varied length of time depending on the shift schedule and individual characteristics (Stevens et al., 2011). Due to these findings, in 2007, the International Agency for Research on Cancer classified shift work with circadian disruption or chronodisruption as a probable human carcinogen (Erren et al., 2010).

Nurses as Health Role Models

The reduction of health related behaviors that are instrumental in the development non-communicable diseases has been recognized by the World Health Organization as a major priority for global public health (Kelly, Wills, & Sykes, 2017). Education, in addition to the aforementioned reduction of negative health behaviors, as a means to support individual behavior change in clients, is a fundamental role for the majority of nurses (Kelly et al., 2017). In recent years, there has been an increase in the expectation of health care professionals to effectively incorporate health promotion methods and processes into their clinical practices (Kelly et al., 2017). Support for this increase in health promotion comes from a variety of outlets, including The International Council of Nurses [ICN] president:

“If each of the world’s 13 million nurses made a personal commitment to eat healthily, exercise appropriately, and avoid the use of tobacco, this would improve their health and well-being and reduce the likelihood of their developing chronic disease. If each of these nurses

acted as role models, educators and change agents among their families, friends, workplaces and local communities to promote healthier lifestyles, together we could help to halt the tide of chronic disease” (International Council of Nurses, 2010, p. 41).

Therefore, as seen in the literature above, there is a disconnect between the fundamental roles of nurses to serve as examples for positive health promotion, and the education provided to instill behaviors within their practice. Policy makers within a Delphi study conducted by Kelly et al. (2017) found that there exists an expectation for nurses to serve as healthy role models. In addition, researchers (McElligott, Siemers, Thomas, & Kohn, 2009) identify health promotion as an area of concern among their research sample and contend that it is a vital component of nursing and therefore needs to be entrenched within the lifestyle of every nurse. Furthermore, Blake and Patterson (2015) report nurses feeling as though it is important to present themselves as health role models, but this belief is inconsistent with behaviors reported. Albeit, consistently across various research is the need to identify appropriate interventions to instill confidence for the promotion of healthy eating (Blake & Patterson, 2015), develop interventions that include a comprehensive curriculum that supports health promotion, while incorporating a wellness approach (McElligott et al., 2009), and ensure employers are better prepared to support nurses in meeting the expectation to act as an example for health promotion (Kelly et al., 2017).

Based on the aforementioned research presented, the method of evidence-based practice (EBP) appears to be missing from nursing workplace protocols related to nurses serving as examples for positive health promotion, and the education provided to instill

behaviors within their practice. With a strong belief in the success of EBP, numerous federal agencies across the United States have sought out to fund EBP centers in order to help answer imperative clinical questions related to the improvement of healthcare delivery and patient outcomes (Melnyk et al., 2012). Designated as a problem-solving approach, EBP incorporates evidence from both qualitative and quantitative studies, individualized patient preferences, needs, and values, in addition to the expertise of the healthcare professional administering care (Melnyk et. al., 2012). As seen in workplace health and safety programs across various first response provider populations, the appropriate measures to ensure the health of personnel has already been undertaken, as seen in the WIF (Wellness-Fitness Initiative) employed across numerous fire departments in both the United States and Canada (IAFF, 2009), and Wellness Unit created by the San Diego Police Department to ensure the reduction of interferences to employee wellness (Police Executive Research Forum, 2018). In relation to the nursing profession, Davidson et. al (in press) makes note that health and wellness are related to the balance of personal and professional values, often neglected in clinical practice. Therefore, overall wellness of nurses has a strong correlation to workplace environment and culture. Hence, authors explore the call for action to prioritize optimization of a healthy work environment by The American Association of Critical-Care Nurses, American Association of Nurses, and Association of Nurse Executives (Davidson et. al, in press).

Workplace Health for Emergency Response Providers

As seen across numerous studies (Caban et al., 2005; Diana & John, 2016; Dobson et al., 2013; Hartley, Burchfiel, Fekedulegn, Andrew, & Violanti, 2011; Kales, Polyhronopoulos, Aldrich, Leitao, & Christiani, 1999; MacMillan et al., 2017; Violanti et

al., 2013) emergency response providers experience similar work environments; stages of high intensity and action, followed by intermittent periods of sedentary activity.

Researchers have noted that emergency response providers are subject to similar health behaviors nurses are: stress factors, irregular meal schedule, work schedule, physical activity, and quality of sleep. Emergency response providers face other possible job hazards that have the potential to impact their health behaviors. These hazards include lifting patients and equipment, treating patients with infectious illnesses, and psychosocial risks due to job demands and social interactions (NIOSH, 2018; Violanti et al., 2013).

According to the World Health Organization (WHO), the workplace is defined as an environment in which employees and managers collaborate to ensure all members of the staff are provided adequate physical, psychological, social, and organizational working conditions, that both protect and promote their health and safety (Burton, 2010). Numerous research studies have evaluated workplace health promotion programs (Jirathananuwat & Pongpirul, 2017) regarding nutrition (Kim, Hong, Mok, & Lee, 2012; Matwiejczyk, Field, Withall, & Scott, 2015; Park et al., 2010), physical activity (Aittasalo, Rinne, Pasanen, Kukkonen-Harjula, & Vasankari, 2012; Pillay JD, Kolbe-Alexander TL, Proper KI, van Mechelen W, & EV., 2012), and stress management (Grawitch, Ballard, & Erb, 2015; Limm et al., 2011). Therefore, researchers and practitioners alike have determined that the workplace is an ideal place to reach a significant portion of adults (Jirathananuwat & Pongpirul, 2017), as this is where working individuals could spend up to 60% of their time, when awake (Batt, 2009).

Workplace health, as a result of the aforementioned environmental effects, has become a focus for multiple emergency response authorities, and the emergency response providers employed. For the purpose of this research, the definition of ‘emergency response providers’ will be operationalized using United States Code Title 6 – Domestic Security §101. The term includes “Federal, State, and local governmental and nongovernmental emergency public safety, fire, law, enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities” (“Domestic Security §101(6),” 1947 & Supp 2011). In order to promote workplace health, maintain job standards, and combat occupational hazards, various departments across fire, law enforcement, and paramedic services have implemented programs to support health behaviors of personnel. The following provides a brief overview of occupational hazards affecting each authority, while examples of interventions from across the United States and Canada can be found in Table 1.

Fire Services.

Obesity is a growing health crisis among the U.S. population, and has become a substantial risk factor for fire fighters, where sudden cardiac death is frequently the primary cause of line-of-duty deaths (Dobson et al., 2013). In spite of the ‘healthy strong worker’ façade, firefighters have elevated rates of cardiovascular disease risk factors (Dobson et al., 2013; Kales et al., 1999). In a study using the 1997-2002 National Health Interview Surveys (NHISs), firefighters and police officers ranked third in prevalence of obesity, with 30% measuring a body mass index [BMI] ≥ 30 kg/m² (Caban et al., 2005). Additionally, in a study of both career and volunteer firefighters in West Virginia, researchers identified nutrition, physical activity, stress, and sleep as individual factors

affecting health behaviors (Wooding, Bernstein, Cormier, & Zizzi, 2018). Specifically, participants most frequently discussed stress and nutrition as recognized barriers. The three most frequent sources of stress discussed during focus groups included, seeing disturbing things on a call, the uncertainty of calls, and knowing the victim of an emergency, which was most common in rural or isolated departments throughout the state studied. Regarding nutrition, participants described the most common barriers as the cost of healthy food, lack of time, personal preferences for unhealthy food, and interrupted meals (when “tones go off”).

In the study conducted by Wooding et al. (2018), research explained that each fire department is responsible for their own standards pertaining to physical fitness levels of firefighters. Although, the National Fire Protection Association (NFPA) offers established fitness standards, adaptation of these standards remains optional for individual departments. In order to serve recruits, active fire fighters, and retirees, the International Association of Fire Fighters (IAFF) and International Association of Fire Chiefs (IAFC) created a task force of departments across Canada and the United States in 1996 to develop the Fire Service Joint Labor Management Wellness-Fitness Initiative (WFI; IAFF, 2009). The task force included departments from Austin, TX, Calgary, AB, Charlotte, NC, Fairfax CO., VA, Indianapolis, IN, Los Angeles Co., CA, Metropolitan Dade County, FL, New York City, NY, Phoenix, AZ, and Seattle, WA (IAFF, 2009). The physical demands placed on uniformed personnel throughout their fire service career are high, therefore the fire service needed a program in place to maintain those same physical capabilities (IAFF, 2009). The WFI program strives to develop a physical fitness program that is both educational and rehabilitative, while employing a well-rounded holistic

approach that is inclusive of fitness, medical, rehabilitation, and behavioral health components, that vary based on department location (IIAF, n.d.). Two departmental examples can be found in Table 1.

Police Services.

When compared to the general population, police officers have an overall lower level of physical and psychological health (MacMillan et al., 2017). This in turn makes them prime candidates for lifestyle-related diseases, such as cardiovascular disease [CVD], diabetes, and overall mortality (Diana & John, 2016; Hartley et al., 2011; MacMillan et al., 2017; Violanti et al., 2013). In fact, police officers are twice as likely, compared to those in the general population, to develop CVD due to their higher prevalence of risk factors traditionally associated with the disease: overweight and obesity, hypertension, and hypercholesterolemia (Ramey et al., 2014). Furthermore, researchers have shown that years of service as an officer is directly correlated with CVD risk (Ramey et al., 2014), increase in body weight (Sörensen, Smolander, Louhevaara, Korhonen, & Oja, 2000), and decrease in physical activity (Lagestad & van den Tillaar, 2014). As a means to better serve officers, departments across the United States have instituted wellness-related programs (Church & Robertson, 1999). An example of a successful workplace intervention from the San Diego Police Department in San Diego, California can be found in Table 1.

Paramedic Services.

In comparison with other emergency response providers, paramedics have a higher incidence rate of PTSD than both police and firefighters (McFarlane, Williamson,

& Barton, 2009). Notably, research has shown that up to 22% of paramedics will develop PTSD (Bennett et al., 2005; Drewitz-Chesney, 2012), signifying that it represents a significant threat to the health of this group. Exploring this further, the results of the National Association of Emergency Medical Technicians (NAEMT) 2016 survey, the National Survey on EMS Mental Health Services, found that 37% of EMS agencies provided no mental health services, meanwhile, 42% provided no health and wellness services (Goodwin & Lane, 2016). The frequent exposure to trauma in the work place, in addition to the lack of acknowledgement due to cultural environment, leaves paramedics vulnerable to suppressing emotions and inherently more susceptible to the effects of PTSD (Drewitz-Chesney, 2012). Further supporting this, researchers at the University of Arizona, in conjunction with Department of Health Services Bureau of Emergency Medical Services and Trauma Systems, compared adult deaths in Arizona from 2009-2015 and found that adults working as EMTs had more than double the rate of suicides (5.2%) when compared to non-EMT adults (2.2%) (Vigil et al., 2019). In order to combat this threat to EMT's agencies across the country have begun to implement various mental health, wellness, and employee assistance programs. Examples of various workplace interventions from agencies affiliated with the National NAEMT can be found in Table 1.

Table 6. Emergency Response Authorities Workplace Interventions

Fire Service	Law Enforcement	Paramedic Service
<p><i>Calgary Fire Department, Calgary, AB.</i></p> <p>According to The Calgary Fire Department, the program has changed the culture of the entire department. They argue that this change is due to the following reasons:</p> <ul style="list-style-type: none"> • Conducting comprehensive medical evaluations • Facilitating thorough fitness assessments • Healthy lifestyle counseling for all departmental personnel (IAFF, 2009). <p>In addition to the aforementioned steps taken to improve department personnel health, the Wellness and Fitness division employed a cardiovascular screening tool from the American College of Sports Medicine, coupled with intervention practices, to help prevent the onset of the disease (IAFF, 2009)</p> <p><i>New York Fire Department, New York City, NY.</i></p> <p>The Fire Department of New York remains committed to members health and safety, conducting annual medical exams that return approximately 100% compliance across the departmental ranks (IAFF, 2009). In addition, those responsible for the WFI program note that the counseling services unit has drastically increased the number of staff available, offering department members a variety of behavioral therapy services (IAFF, 2009).</p>	<p><i>San Diego Police Department (SDPD), San Diego, California.</i></p> <p>In 2011, the department created the Wellness Unit, specifically defining the mission of the unit as “reducing or removing interferences to employee wellness, whether personally or professionally induced, by providing help resources, training and intervention.” (Forum, 2018). As a means of supporting SDPD personnel, the range of services and activities provided by the unit fall into three main categories:</p> <p><i>Providing services for individuals</i></p> <p>Wellness staff are available for department employees who are in crisis, or experiencing an issue, whether it be personal or professional. Individuals within the unit are trained to reach out to officers within the department based on the review of major incidents, be active in reaching out, and provide appropriate referral services, if deemed necessary.</p> <p><i>Agency-wide activities and services</i></p> <p>Directed toward instruction, this service involves the development and delivery of wellness-based training programs to groups across the department. For examples, the unit provides educational seminars on issues related to wellness such as sleep hygiene, nutrition, and financial planning.</p>	<p><i>Counseling</i></p> <p><u><i>Grief Counselors</i></u> – In Pinellas County Florida, Sunstar Paramedics retains the services of grief counselors for crews when the resource is needed (NAEMT, 2019). The grief counselor has been available following the conclusion of traumatic calls, and after the death of another responder, whether it was on-duty or not (NAEMT, 2019). In addition, Sunstar Paramedics also has a memorial garden where colleagues gather following the death of a staff member to share memories and honor the fallen (NAEMT, 2019).</p> <p><u><i>First Responder PTSD Support Group</i></u> – Open to all first responders, active and retired (police, fire, corrections, dispatch and EMS personnel), the Mental Health Association of Indian River County, Florida offers a free support group for PTSD (NAEMT, 2019). With the opportunity to connect with peers in a comfortable, and confidential setting, the goal of the group is to help remove the destructive consequences of consistent exposure to PTSD and provide support through understanding (NAEMT, 2019). The group is facilitated by a trained therapist and retired Boston firefighter (NAEMT, 2019).</p> <p><i>Resiliency Skills Training</i></p> <p><u><i>First Responder Resilience Program</i></u> – Facilitated by the Centura Health and the Colorado Department of Health, this one-</p>

Furthermore, the recent addition of blood pressure lowering, and smoking cessation programs have proven to be beneficial, and the department has committed to continue supporting the WFI initiative (IAFF, 2009).

Interagency/interdisciplinary activities and services

In order to ensure the SDPD's programming is appropriately informed, the final category mandates the development of partnerships with external agencies such as academic institutions and various wellness experts. (Forum, 2018).

day course educates responders on the skills to fight back from adversity (NAEMT, 2019). Within the training program, topics such as goal setting, nutrition, exercise, sleep hygiene, relaxation, and positive self-talk to overcome self-defeating thoughts are covered, as well as many others (NAEMT, 2019).

Man Therapy – Designed to help specifically men with depression, anxiety, anger, and suicidal thoughts, the Colorado Department of Public Health and Environment created mantherapy.org (NAEMT, 2019). The website includes a brief survey to assess mental health and health habits, as well as the ability to send e-cards to inform others of the resources available through Man Therapy (NAEMT, 2019). Slogans for the program include “You can’t fix your mental health with duct tape,” and “Man Therapy is for men who think sirens are driving music.” (NAEMT, 2019).

Theoretical Framework

Theory of Planned Behavior.

Developed to understand the relationships between attitudes, intentions, and behaviors, the Theory of Planned Behavior (TPB; Ajzen, 1985), Figure 2, assumes that the best predictor of behavior is behavioral intention, which is determined by attitude toward the behavior and the social normative perceptions towards it. In the work conducted by Fishbein and Ajzen (1975) and Ajzen (1985) leading up to the development of the TPB, there was a clear distinction made between attitude toward an object and attitude toward a behavior with regards to that object. The clarification was identified when majority of attitude theorists were concerned with the attitude toward an object (attitude toward cancer) in attempting to predict a behavior (breast cancer screening) (Montano & Kasprzyk, 2008). However, Fishbein and Ajzen (1975) determined that attitude toward the behavior (attitude toward breast cancer screening) is a significantly better predictor of that behavior (attending a breast cancer screening) than attitude toward the object (cancer) in which the behavior is addressing.

Theoretical Constructs.

Ajzen and Fishbein (1980) describe the association of beliefs and behavior as the way in which beliefs acquired are related to a specific behavior, are viewed as not relevant. However, they will undoubtedly serve as a guide during the decision to perform or not perform a behavior. Specifically within the TPB, there exists six essential components: behavioral beliefs (attitude toward a behavior), subjective norms (what others think of behavior), control beliefs (control for doing behavior), intentions to do

behavior, actual behavior, and external variables (demographic variables, self-efficacy). Individuals hold beliefs about potential positive or negative outcomes of a behavior, therefore directly influencing behavioral beliefs which are presumed to predict an individual's attitude to personally performing a behavior (Fishbein & Ajzen, 2010). Authors note that if the perceived belief of performing the behavior is more positive than negative outcomes, then the attitude towards the behavior is more likely to occur (Fishbein & Ajzen, 2010).

Subjective norms are described as the perception that other prominent individuals or groups would approve, or disapprove, of their performing of these behaviors (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010). Furthermore, the concept of subjective norms refers to an individual's own perception that these significant others value the performance or nonperformance of the desired behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010). However, the individual's perception may not accurately reflect the significant others think the individual should actually do (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2010). Although, it is understood that if important others are believed to approve of a behavior, in addition to perform the behavior as well, individuals are more likely to recognize social pressures and engage in the behavior (Fishbein & Ajzen, 2010). Within emergency departments, researchers identified four categories present with emergency department culture; cognitive, environmental, linguistic, and social attributes (Pearson, Spavia, & Hart, 2013). Researchers found that the sample surveyed relied on each other for support, remaining consistent with the previous research.

Individual beliefs are formed about personal or environmental factors that can support or hinder attempts to perform a behavior (Fishbein & Ajzen, 2010), thus Ajzen

(1985) modified the Theory of Reasoned Action model to include “control beliefs or perceived behavioral control”, thus producing the Theory of Planned Behavior. Control beliefs manifest as a sense of either low or high self-efficacy, resulting from a cognitive process in which an individual integrates past experiences, attitudes, emotions, and knowledge, as it relates to the behavior in question (Bandura, 1986; Fishbein & Ajzen, 2010). Furthermore, if an individual identifies more facilitating than inhibiting control beliefs, there is an understanding that perceived behavioral control should be high (Fishbein & Ajzen, 2010).

As a valued component of the TPB model, external variables include personality traits, self-efficacy, and demographic information. External variables are considered items within the TPB that can influence the relationship an individual has with a certain behavior. Similarly to control beliefs, self-efficacy as an external variable calls on past experiences, attitudes, and social influences in order to overcome a difficult behavior or activity (Bandura, 1986; Fishbein & Ajzen, 2010). Furthermore, according to Ajzen (1991), those who perceive a strong sense of behavioral control are more likely to possess higher amounts of confidence in their ability to perform a behavior or activity successfully.

Some researchers have found that the initial step to predicting and understanding behavioral intentions comes from measuring an individual’s attitude toward their performance of the specific behavior (Heath et al., 2017; Heath & Crowell, 2007). Ajzen and Fishbein (1980) stressed the importance of measuring behavioral criterion in terms action, target, context, and time for correspondence between attitude and intention. In order to complete this appropriately, semantic differential scales (Likert scale of 1-7) are

recommended (Ajzen & Fishbein, 1980). As demonstrated, the TPB model is appropriate for this study because it not only considers the external variables affecting behavior, but it considers both the beliefs of the individual and beliefs of significant others (e.g. co-workers). Researchers have found the initial step to predicting and understanding behavioral intentions comes from measuring an individual's attitude toward their performance of the specific behavior (Heath & Crowell, 2007). Ajzen and Fishbein (1980) stressed the importance of measuring behavioral criterion in terms action, target, context, and time for correspondence between attitude and intention. In order to complete this appropriately, semantic differential scales (Likert scale of 1-7) are recommended (Ajzen & Fishbein, 1980). As demonstrated, the TRA model is appropriate for this study because it not only considers the external variables affecting behavior, but it considers both the beliefs of the individual and beliefs of significant others (e.g. coworkers).

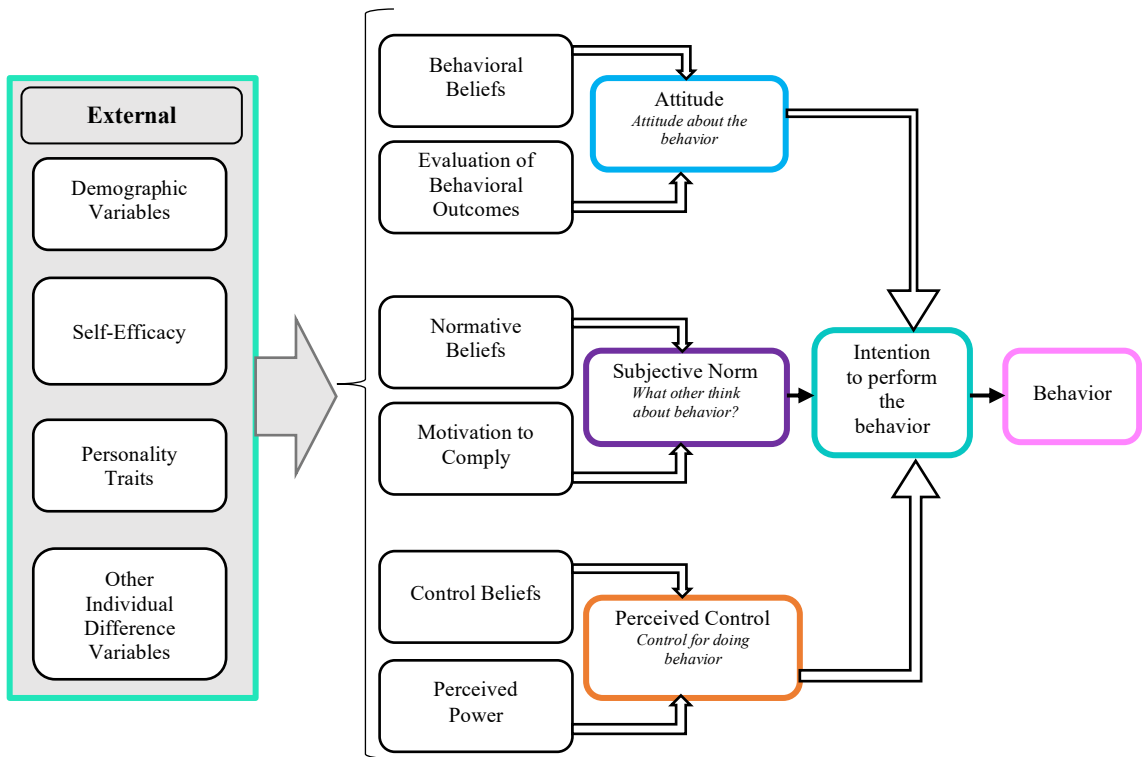


Figure 3. Theory of Planned Behavior: Adapted from Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social change. Englewood Cliffs, NJ: Prentice Hall.

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doi:10.1111/j.1365-2834.2008.00923.x

VITA

EDUCATIONAL BACKGROUND

Master of Science in Sport and Exercise Psychology 2020 (expected)

University of Kentucky, Lexington, KY

Dr. Marc Cormier, PhD, Advisor

Dr. Janie Heath, PhD, APRN-BC, & Dr. Jeff Reese, PhD, Committee Members

Thesis: Health Priorities, Current Lifestyle Behaviors, and Barriers to a Healthy Lifestyle among Emergency Department Nurses.

Master of Science in Community and Leadership Development 2018

University of Kentucky, Lexington, KY

Dr. Kristina Hains, PhD, Advisor

Dr. Lorraine Garkovich, PhD & Dr. Bryan Hains, PhD, Committee Members

Applied Research Project: *Cognition for Coaches: Curriculum Development for Coaches Working in Physical Activity Programming for Veterans with a Physical Disability*

Bachelor of Recreation Management with Honors 2015

Acadia University, Wolfville, Nova Scotia, Canada

Dr. Mary Sweatman, PhD, Advisor

Thesis: *The Perceived Benefits and Barriers for Baby Boomers Volunteering in Hospital Settings*

PEER-REVIEWED PUBLICATIONS UNDER REVIEW OR IN PROGRESS

Hains, K., & Hains, B, Stanard, V., Rios, M., & **White, S.C.** (Under review). Skills, knowledge and values essential for effective community development practice: A Delphi study. *Journal of Community Practice*.

White, S.C. & Hill, J.C. (Under review). Gowns and Goal Lines: Embracing Athletic Identity in the Classroom. *Journal for the Study of Sports and Athletes in Education*.

Goodwin, R., Murphy, E., **White, S.C.**, & Schedler, T. (In preparation). Multicultural Training and Awareness in Sport Psychology Practitioners.

PEER-REVIEWED CONFERENCE PRESENTATIONS

White, S.C. & Hill, J.C. (2019, October). *A Tale of Two Identities: How Student-Athletes Conceptualize Skills and Challenges*. To be presented at the annual Association for Applied Sport Psychology Conference. Portland, Oregon.

Hains, K., Hains, B., & **White, S. C.** (2019, September). *Skills, knowledge and values necessary for community development practice towards cultivating quality of life: A Delphi study*. To be presented at the annual International Society for Quality-of-Life Studies (ISQOLS) Conference. Granada, Spain.

- White, S.C. & Hill, J.C.** (2019, March). *Gowns and Goal Lines: Athletic Identity in the Classroom*. Presentation at the 2019 Spring Research Conference, Research to Practice: Pursuing Vision and Values in Education at the University of Kentucky. Lexington, KY
- Scheidler, T.R. & **White, S.C.** (2019, February). *Severe Traumatic Brain Injury and Athletic Identity: A Case Study*. Presentation at annual Mid-West Sport and Exercise Psychology Symposium. Lexington, KY
- White, S.C.**, Geldart, R., & Conway, K. (2018, October) *Adapted Physical Activity and the Creation of Community*. Poster presented at the annual conference for the Association for Applied Sport Psychology. Toronto, ON, Canada.
- White, S.C.** (2017, June). *Student Engagement at a National Level*. Presentation at annual National Community Development Society & NACDEP Annual Conference. Big Sky, MT.
- White, S.C.** (2015, October). *Baby Boomer Volunteers: Benefits and Barriers*. Presentation at annual Recreation Nova Scotia Conference. Digby, NS, Canada.

AWARDS

Academic All-Canadian	2015
Women's Rugby, Acadia University, Wolfville, Nova Scotia	
James Bayer Leadership Award	2015
Department of Recreation Management, Acadia University, Wolfville, Nova Scotia	
Live-N-Learn Award	2013
Department of Recreation Management, Acadia University, Wolfville, Nova Scotia	