



Walden University
ScholarWorks

Walden Dissertations and Doctoral Studies

Walden Dissertations and Doctoral Studies
Collection

2020

The Relationship between Sense of Coherence and Coping with Stress Among Emergency Room Physicians

Melina Masihi
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>



Part of the [Health and Medical Administration Commons](#)

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Health Sciences

This is to certify that the doctoral dissertation by

Melina Masihi

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Manoj Sharma, Committee Chairperson, Health Services Faculty

Dr. Donna Clews, Committee Member, Health Services Faculty

Dr. Chinaro Kennedy, University Reviewer, Health Services Faculty

Chief Academic Officer and Provost

Sue Subocz, Ph.D.

Walden University

2020

Abstract

The Relationship between Sense of Coherence and Coping with Stress
Among Emergency Room Physicians

By

Melina Masihi

MD, Caribbean Medical School, 2014

MHA, Walden University, 2015

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Healthcare Administration

Walden University

April 2020

Abstract

Physicians face different stressful situations daily when caring for patients in the emergency room (ER). The individual ER physician's ability to cope with stressful situations varies considerably and affects patient care. Developing a sense of coherence (SOC) is thought to be one of the significant strategies for self-regulation in stressful conditions like those in the ER. The purpose of this research was to examine the relationship between SOC and coping abilities among emergency physicians in the United States. The study used a quantitative, cross-sectional design to assess physicians' SOC and coping skills using an SOC scale and a coping scale, respectively. The salutogenic theory—the theoretical framework in the study—explains how emergency physicians need to understand the stressors in their line of work, define the meaning of these stressful situations, and establish ways of coping with them. The research questions focused on whether a correlation exists between the SOC elements and the various aspects of stress. Convenience sampling was used to obtain a sample size of 140 ER physicians. The findings revealed a statistically significant relationship between SOC and coping with stress ($p = 0.002$) analyzed by SPSS. This study has implications for positive social change. Its results could improve understanding of SOC among ER physicians and thus enhance their coping skills and, ultimately, improve patient care.

The Relationship between Sense of Coherence and Coping with Stress

Among Emergency Room Physicians

By

Melina Masihi

MD, Caribbean Medical School, 2014

MHA, Walden University, 2015

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Healthcare Administration

April 2020

Dedication

I dedicate this study to my family. To my loving better half partner, we started this journey together and this accomplishment is as much yours as it is mine. You've always pushed me to achieve more than I have ever thought I could or even deserved. Your patience and belief in me have helped me to continue this journey despite the many days of uncertainty and nights of doubt. All that I have accomplished is a direct result of your love and support. To my mother, the only woman I know who is as strong and dedicated to the success and happiness of her children. Thank you for all the sacrifices you have made for me over the years to ensure I received the best education possible. Thank you for instilling in me self-resilience and discipline. Thank you for believing in me and supporting me throughout this long and difficult journey. To my Dad who taught me that the sky was my limit and always encouraged me to achieve my academic endeavors and go as far as possible; who instilled in me the values of finishing what I set out to do and most importantly doing it the right way, no matter how long it takes. To my Sweetest Sister, thank you for listening to me when I cried, for coming to me when I needed you, and for always answering my calls. Last, but not least, being available to text message all night; for encouraging me to stay strong and be up late so that I can concentrate on my writing. Thank you again for your prayers, love, and encouragement. To my lovely brother for all his support and believing in me while I through this chapter of my life. He consistently reminds me that I am a good role model for him and that all my hard work encourages him to complete Law school since he is youngest child in our family. I am blessed, God give me such family to help me and support me. Also, a special thank you to my cute puppy (my baby) also being next to me and taking away my stress.

Acknowledgments

This project would not have been possible without the invaluable support of many people. First, and foremost, I relied upon my faith and belief in God, who has made all of this possible. I want to thank my admirable chair, Dr. Sharma for providing scholarly, professional, and mentoring guidance throughout the doctoral process. He always made himself available to assist in achieving my academic goals. His expertise and guidance encouraged an exploration of new possibilities and inquiries. Also, I am extremely grateful for the continuous scholarly feedback and updates me with new information. I would also like to thank my committee member Dr. Clews for her support and superb guidance, as well as the time and attention she devoted to my project. Also, I would like to thank my URR reviewer for all their encouragement, dedication, and support throughout this process of achieving my goal. Thank you all for keeping me on task and encouraging me not to give up.

Table of Contents

LIST OF TABLES	III
LIST OF FIGURES	IV
CHAPTER 1: INTRODUCTION TO THE STUDY.....	1
INTRODUCTION	1
BACKGROUND.....	4
PROBLEM STATEMENT	5
PURPOSE OF THE STUDY	6
RESEARCH QUESTIONS AND HYPOTHESES	7
MEASUREMENT OF VARIABLES.....	9
THEORETICAL FRAMEWORK	10
NATURE OF THE STUDY	11
OPERATIONAL DEFINITIONS.....	11
VARIABLES	15
ASSUMPTIONS.....	17
LIMITATIONS.....	18
SIGNIFICANCE OF THE STUDY	18
SUMMARY	19
CHAPTER 2: LITERATURE REVIEW	21
INTRODUCTION	21
LITERATURE SEARCH STRATEGY	22

THEORETICAL PERSPECTIVE	22
SUMMARY	45
CHAPTER 3: RESEARCH METHODOLOGY	47
INTRODUCTION	47
RESEARCH DESIGN AND RATIONALE	47
RESEARCH QUESTIONS AND HYPOTHESES	55
THREATS TO VALIDITY	57
SUMMARY	58
CHAPTER 4: STUDY FINDINGS	59
DATA COLLECTION	59
RESULTS	60
SUMMARY	80
CHAPTER 5: INTERPRETATION OF THE RESULTS	82
INTERPRETATION OF THE FINDINGS	82
LIMITATIONS OF THE STUDY	93
RECOMMENDATIONS	94
CONCLUSION	97
REFERENCES.....	98

List of Tables

Table 1. Dependent and Independent Variables	17
Table 2. Research Questions.....	54
Table 3. Respondents' Gender.....	60
Table 4. Respondents' Age.....	61
Table 5. The Ethnicity of the Respondents.....	61
Table 6. Years of the Practice of the Respondents	62
Table 7. Descriptive Statistics for Study Variables ($n = 140$)	62
Table 8. The Association Between Gender, Race, Age, and the Years in Practice.....	64
Table 9. Sense of Coherence.....	66
Table 10. Number of physicians with response to the Coping with stress	73
Table 11. Relationship between SOC and Coping with Stress in ER for Physicians.....	73
Table 12. Regression Analysis of Problem-Focused Coping by ER Physicians	75
Table 13. Regression Analysis of Appraisal-Focused Coping by ER Physicians	77
Table 14. Regression Analysis of Emotions-Focused Coping by ER Physicians	78
Table 15. SOC and Occupation-Focused Coping.....	79

List of Figures

Figure 1. Independent and dependent variables.....	9
--	---

Chapter 1: Introduction to the Study

Introduction

Emergency staff work in one of the most challenging environments; they are not only required to work under extreme pressure but must also be mindful of patient safety. Consequently, they are exposed to physical, psychological, and emotional stressors. Stress is often recognized as the precursor of burnout (Rushton, Batcheller, Schroeder, & Donohue, 2015). Burnout is defined as a prolonged response to job-related interpersonal and emotional stressors, characterized by three basic components, namely exhaustion, cynicism, and inefficacy, that is, depersonalization, emotional exhaustion, as well as a low sense of personal accomplishment (Maslach & Leiter, 2016). Emotional exhaustion is related to emotional overextension and exhaustion; depersonalization refers to an impersonal response toward the recipients of one's care or treatment; personal accomplishment refers to one's feelings of competence and achievement (Hutchinson, Haase, French, & McFarlane, 2014).

These stress factors can be overwhelming to emergency physicians, and may also affect their performance, thus compromising patient safety. Hutchinson et al. (YEAR) suggested that various aspects of the practice of emergency medicine are not healthful. Job demands include high patient-to-physician ratios, shift work, repeated exposure to traumatic events, limited resources, provider-patient as well as provider-provider dissonance, critical decision making based on incomplete information, potentially violent situations, and litigation concerns (Goldberg et al., 1996). Stress does not cause burnout, yet burnout exists in the presence of stress (Hutchinson et al., 2014).

Doan–Wiggins et al. studied North American emergency physicians and reported high levels of burnout and stress (1995). The authors conducted a survey to determine the sources of job satisfaction and stress among 1,317 emergency physicians. They reported that 25.2% felt burned out or impaired and 23.1% planned to leave the practice of EM within 5 years.

Perceptions of burnout or impairment were associated with less overall satisfaction in the practice. Burnout and impairment were also linked with psychiatric, drug, or alcohol problems and the feeling that emergency medicine had contributed to those problems. In general, some of the frequently reported consequences of stressful events among ER physicians are decreased job performance, career satisfaction, and high prevalence of psychological issues such as depression, anxiety, and suicide (Burbeck, Coomber, Robinson, & Todd, 2002; Chapman, 1997). The impact of ER physicians' stress on medical errors has also been investigated (Aala et al., 2014).

Emergency doctors need to deal with their stress in a way that does not adversely affect patient safety.

Previous studies have been carried out on how stress affect the healthcare workers when on duty especially those working in emergency rooms. Burbeck et al. (2002) conducted a study to assess levels of occupational stress among UK accident and emergency consultants. They reported high levels of psychological distress among 44% of them, which is higher than levels in the general population of 187 participants. ER physicians may experience issues such as emotional exhaustion and depersonalization, which can cause burnout and result in a low attitude towards their work (Lu, Dresden, McCloskey, Branzetti, & Gisondi, 2015). The increased workloads due to high patient to physician ratio may lead to higher levels of stress (Estryn-Behar et al., 2010). Burbeck et al. (2002) indicated in his study that a high level of distress is

detrimental to the health and personal lives of these physicians but also to the effectiveness and reliability of their clinical work.

Antonovsky (1979) proposed a salutogenic approach to health based on the assumption that the human environment causes strain. The normal state of the human organism is one of disorder and conflict; Antonovsky focused on making order out of chaos and emphasized the importance of coping resources in dealing with stress. The researcher sought to explain how a shared variety of components, such as education, social support, and childhood living circumstances, facilitate coping with stress and promoting health. He found that these resistance resources have a common life orientation, which he referred to as *sense of coherence* (SOC; Sharma, Atri, & Branscum, 2011, p. 80). SOC refers to the extent to which, and how, individuals view life when they are faced with stressful situations (Richardson & Ratner, 2005). According to Antonovsky, studies have demonstrated that an individual's SOC is an important component of his or her health and well-being (1987). However, SOC and its influence on coping among ER physicians has not previously been studied.

This study looked at level of SOC and how it influences emergency physician's ability to cope with occupational issues based on the assumption that high levels of SOC are likely to enhance an individual's ability to withstand stress, especially among the emergency staff. This research is important because it provides recommendations that may enhance emergency physicians' quality of life so that they can continue executing their mandate even under stressful conditions for the purpose of achieving social change. In this regard, the study potentially creates social change and helps to improve the well-being of emergency physicians in their line of work.

Background

Occupational stress has been widely associated with adverse health effects on healthcare professionals and on job satisfaction (Burbeck, Coomber, Robinson, & Todd, 2002; Li et al., 2014). Not only does stress affect healthcare professionals' physical well-being but also their emotional well-being (Burbeck, Coomber, Robinson, & Todd, 2002). Two international studies in particular documented ER physicians' stress factors (Estryn-Behar et al., 2010; Kalemoglu & Keskin, 2002). SOC provides the necessary elements for enhancing the way people cope with stress: comprehensibility, manageability, and meaningfulness (Sharma, Atri, & Branscum, 2011, p. 58; Vogt, Jenny, & Bauer, 2013). According to Antonovsky (1986), SOC provides problem-focused, appraisal-focused, occupational-focused, and emotional-focused coping strategies by facilitating people to decide how they cope with stress. It means that a high level of SOC is associated with improved coping with stress (Li, 2015). Saijo et al. (2013) identified long work hours and high patient ratios as major causes of burnout. A high level of SOC could play an important role in enabling individuals to comprehend, manage, and create meaning out of stressful situations.

In recent years, the concept of SOC has received increased attention in social and medical science. Its rising importance is closely connected to changing conceptions of health—which have moved from a pathogenic view to one that includes a broader notion of relative well-being, or *salutogenesis* (Eriksson, 2016). SOC has an integral role in this salutogenic perspective, since it is a psychological factor that varies among individuals and is implicated in establishing a health-driven rather than a pathology-driven outlook (Eriksson, 2016). The wider-view approach is especially useful when considering the outlook and strategies of emergency physicians in coping with stress.

According to Antonovsky, SOC means

a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli, deriving from ones internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (Antonovsky, 1987, p. 19)

Therefore, physicians with higher levels of SOC are more likely to stay focused than those with low levels of SOC due to their ability to manage and suppress emotions that are often associated with the emergency department (Naudé & Rothmann, 2006). According to Sarenmalm et al. (2013), a relationship between SOC and coping strategies that could affect the ability of a health care professional to interact positively with others in clinical environments.

Problem Statement

Burnout, among other things, affects the health of healthcare professionals, who often have to endure high patient-to-staff ratios. Emergency staffs have been linked with burnout because of the nature of their work (Bragard, Dupuis, & Fleet, 2015). The situation is even more pronounced in emergency departments where staffs have to attend to many patients arriving at the hospital. Physical, emotional, and psychological stress can affect the ability of emergency doctors to handle patients safely (Saijo et al., 2013). However, there has been no research to date on the role of SOC on coping with stress among emergency physicians. The ability of physicians to cope with stress is important in helping them to perform their duties effectively. The present study acknowledged the problem of stress among emergency physicians and sought to demonstrate the way in which SOC promotes and protects the well-being of emergency

professionals by enabling them to better cope with stress. It is important that emergency room doctors have better stress coping strategies because of the complexity of their work and their duty of care to ensure the safety of patients (Welp, Meier, & Manser, 2015). According to one study, a physician's SOC level affects patient outcomes. However, this outcome depends on the stress levels associated with the number of patients arriving at the emergency department (Saijo et al., 2013). Therefore, it is critical that levels of SOC among the emergency physicians are enhanced in order to improve the patients' quality of care.

Emergency physicians work in dynamic occupational environments that is characterized by different stress levels. Therefore, there is need for ER doctors to develop strategies to cope with this stress. SOC reflects the individual's ability to withstand stress (Kretowicz & Bieniaszewski (2015). Understanding the individual levels of SOC and how SOC affects emergency physicians' coping is important in finding solutions that increase their resistance to stress as well as promote their well-being to increase their productivity in the emergency department.

Purpose of the Study

The aim of this dissertation was to determine the ways in which SOC is associated with emergency physicians' coping with stress and help fill a gap identified in the literature. The study is unique in the sense that it fills the research gap by exploring the concept of SOC with regard to emergency physicians. The research sought insights into the concept of SOC as well as its dimensions, including the way it is measured in emergency doctors. The outcome of this study is expected to recommend ways to improve SOC so that ER physicians can cope better with stress.

Research Questions and Hypotheses

The research hypothesized that SOC and ER physicians' coping with stress are positively correlated. As such, strong SOC enhances the ability of emergency physicians to cope with stress in the emergency department. This study sought to find out the relationship between SOC and emergency physicians' coping with stress. The study was guided by the following research questions and hypotheses.

RQ1: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of problem-focused coping by the ER physicians?

H₀₁: There is no association between comprehensibility, manageability and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

H₁₁. There is an association between comprehensibility, manageability and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

RQ2: Is there a relationship between SOC (manageability, comprehensibility and meaningfulness) and the ability of ER physicians to adopt appraisal-focused coping to deal with stressors?

H₀₂: There is no association between comprehensibility, manageability and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

H₁₂. There is an association between comprehensibility, manageability, and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

RQ3: Is there a relationship between SOC (meaningfulness, comprehensibility, and manageability) and ER physicians' ability to adopt emotions-focused coping to deal with stressors?

H₀₃: There is no association between comprehensibility, manageability, and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

H₁₃: There is an association between comprehensibility, manageability, and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

RQ4: Is there a relationship between SOC (meaningfulness, comprehensibility, and manageability) and ER physicians' ability to adopt occupation-focused coping to deal with stressors?

H₀₄: There is no association between comprehensibility, manageability, and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

H₁₄: There is an association between comprehensibility, manageability, and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

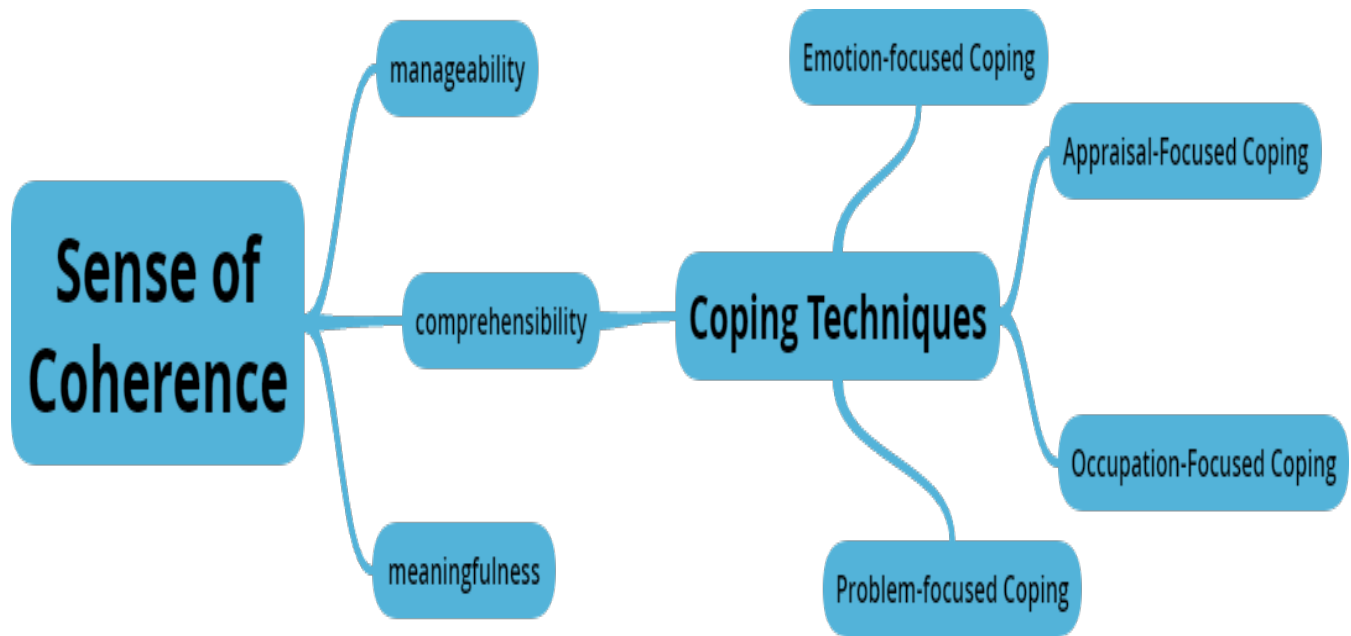


Figure 1. Independent and dependent variables.

Measurement of Variables

Antonovsky's SOC scale is a commonly used tool in measuring SOC levels of an individual. The scale measures three components of SOC that promote coping with stress: *manageability*, *comprehensibility*, and *meaningfulness* (Sharma, Atri, & Branscum, 2011, p.58). This study used this scale to measure the SOC of emergency physicians). Construct validity was assessed for all the dimensions of a SOC scale using confirmatory factor analysis methods. The SOC components constituted the independent variable, while the physician's coping with stress was the outcome variable for the scale. A Coping Scale for Adults-Second Edition (CSA-2) was used to determine the level of coping stress for the sample. Its features consisted of (a) a guide to assist the interviewees to assess, reflect on, and develop their coping skills, (b) a guide to measure their use of various behaviors for coping and the effectiveness of their responses, (c) a streamlined form of items for measuring coping, and (d) a simplified scoring and interpretation mechanism (Frydenberg et al., 1997).

Theoretical Framework

The relationship between SOC levels and coping with stress is explained by the theoretical perspective of Antonovsky's (1987) salutogenesis theory. According to this study's theoretical framework, the emphasis is on the SOC's health-promoting attributes. The framework also focuses on the individual's attributes that are related to the successful adaptation to the stressors of life. Antonovsky's theory of salutogenesis is goal-centered, suggesting that it enhances the protective and health-promoting factors that enable individuals to manage stress (Antonovsky, 1996). It is a useful framework for explaining the relationship between the levels of SOC and emergency physicians coping with stress.

The salutogenic theory suggests that emergency physicians need to understand the stressors in their line of work, define their meaning, and establish ways of coping with them. Low levels of SOC limit the management of stress and can lead to negative outcomes. According to the theory, individuals who perceive stressors as nonthreatening are likely to resolve the issues effectively and promote healthy living. Therefore, the theoretical model used identifies a SOC as the basic concept that can be used to comprehend, explain the meaning of, and manage stress among emergency physicians.

The salutogenic theory played an important role in discussing the research questions as well as providing the basis upon which emergency physicians can improve their levels of SOC to cope with stress better at their workplaces. The research adopted the salutogenic theory over other theoretical models because it was assumed to be more effective at assessing the ability of emergency physicians to cope with stress at work.

Nature of the Study

The study used a cross-sectional research design to answer the research questions. This research approach was deemed appropriate to help in the successful gathering of data required for the statistical analysis. The various elements of SOC that form the variables of the study include i.e. meaningfulness; comprehensibility, and manageability are the independent variables while the dependent variable was coping with stress. The cross-sectional design helps to answer the research questions and to explain the research hypotheses. For example, one of the key assumptions was that a high level of SOC enhances the individual's coping with stress. As the independent variable, SOC was used to predict the physician's coping with stress. Emergency physicians constituted the target population because they are often exposed to stressful situations. Sampling was also applied where a group of 150 ER physicians based on G*Power calculations were selected. In the estimation of the sample, F tests, linear multiple regression, R² deviation, effect size (= 0.10, medium), alpha = 0.05, Power = 0.8, and the number of independent variables ($n = 3$) were used to calculate the sample size that would confer medium effect size. The SOC scale was used to measure the level of SOC of the participants. It was assumed that emergency physicians with the highest SOC would have enhanced ability of coping with stress, while those with lower levels have reduced ability. Thus, this study sought insights into the role of SOC in helping ER physicians to better cope with stressful situations at work.

Operational Definitions

Sense of Coherence

The concept that one can withstand and endure a dynamic environment and can predict the goings-on in their environment. This is related to the attitude of an individual and how he or she perceives situations. It refers to an enduring attitude and measures how people view life and

stressful situations and how they identify their general resistance resources (GRR) to maintain and develop their health (Eriksson & Lindstrom, 2007). From an operational perspective, SOC is the measure of the actual level of comprehensibility, meaningfulness, and manageability that an individual will experience when exposed to a high level of stressors (Antonovsky, 1987).

Bauer and Jenny (2007) proposed the work-related SOC concept, which defines a person's perceived comprehensibility, manageability and meaningfulness in the workplace. The definition of the concept is in line with Antonovsky's (1987) general concept of comprehensibility, manageability and meaningfulness. Bauer and Jenny's (2007) perception of work SOC is influenced by the interaction between the worker's characteristics and the characteristics of the working environment. This is also in line with the conceptualization of salutogenesis whereby the development of a SOC is affected by stressors and general resistance resources, the transactional model of stress, the health-development model, and the person environment-fit model (Vogt, Jenny, & Bauer, 2013). Furthermore, in the job demands-resources model, job demands, and resources are thought to be influenced by individual and organizational factors (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Eberz, Becker and Antony (2011) used Bauer and Jenny's (2007) work-related SOC concept to re-interpret this model as a person's meta-resource that moderates relationships at the job place by reducing the potential adverse effects of stressors.

It has been demonstrated in an exploratory study that work SOC explains incremental variance, unlike the general sense of coherence, and is a stronger predictor of work-related stress (Eberz, Becker, & Antony, 2011). Eberz, Becker and Antony further suggested that the mediating role of work SOC can explain the health-promoting effect of social support. Based on the original work SOC concept as an interactional construct, a 9-item questionnaire was

constructed to measure comprehensibility, manageability and meaningfulness (Vogt, Jenny, Füllemann, Inauen and Bauer, 2012). These authors reported a good internal consistency (Cronbach's $\alpha = 0.83$) of the scale. The work SOC scale has a structure consisting of three factors (i.e. comprehensibility (measured by 4 items), manageability (measured by 2 items), and meaningfulness (measured by 3 items) and their dimensions with total possible summated scores range of 9–63.

Comprehensibility

Defines the extent to which one understands events regarding creating logical sense based on their structure, consistency, and organization (Kikuchi et al., 2014). On the 9-item questionnaire, the subdimension of comprehensibility is defined by 4 items that refers to the perception of internal and external stimuli and how one understands information in a clear, coherent, and structured manner rather than a disordered, unclear, random, chaotic, and unexplained manner (Drageset et al., 2014). Each construct is measured on a 7-point Likert scale with a possible score range of 1–7. Since there are four items under 'comprehensibility, the possible summated score ranges between 4 and 28.

Manageability:

From a constructive point of view, manageability is a measure of and collection of features that provide support regarding the ease, competency, and speed that can be applied to discover, modify, configure, control, deploy and supervise a system (Ezeamama et al., 2016). According to the study conducted by Goldberg et al. (1996), manageability is a key component of a functioning system. It provides system robustness by facilitating various dimensions of system reliability, serviceability, and availability. This sub-dimension of 'manageability' was measured using two items on the 9-item SOC questionnaire. In the present study example (the

second and seventh items – easy to influence and controllable) respectively address manageability at the ER. Both constructs were measured on a 7-point Likert scale with a possible score range of 1–7. The possible summated score ranges for manageability were, therefore, between 2 and 14.

Kretowicz and Bieniaszewski (2015) also indicated that effective manageability provides high efficiency in operations as it facilitates various elements of planning that provides a predictive model of what is likely to take place and the measures to mitigate problematic situations. It provides mental preparedness to handle difficult situations through the provision of effective system data and a procedure to handle such scenarios. Furthermore, manageability lowers the cost of network system operations. In this case, the independent variable is manageability, while the dependent variable is various aspects of the systems that are affected by the independent variable. Consequently, manageability was measured based on the ease of competency and speed that the physicians used to carry out their emergency department duties (Kretowicz & Bieniaszewski, 2015). The ease, speed, and competency of ER physicians carrying out their duties reflect their ability to manage stress and cope with stressful situations. It gives a cognitive meaning to stimulus derived from external and internal sources.

Meaningfulness

Defines the extent to which an individual make meaning out of a stressful situation. It is described by the ability to give emotional meaning to a situation (Romas & Sharma, 2017). It involves giving a cognitive meaning to stimulus derived from external and internal sources. From an operational perspective, meaningfulness is the level of composure that an individual exhibit when subjected to an extremely stressful situation (Malinauskiene et al., 2009). On a 9-

item SOC scale, three constructs have been used in previous studies to determine the “meaningfulness” dimension at the workplace. Items such as ‘meaning,’ ‘significance,’ and ‘predictable’ are used to generate scores for a physician’s perception of meaningfulness. The possible range of scores on a 7-point Likert scale is 1 to 7, while the possible summated scores range between 3 and 21.

Coping

Refers to the strategies used to manage stressors or stressful conditions in an individual’s environment (Mittelmark et al., 2017). Studies have evaluated coping based on the four types of coping using the COPE Inventory (Carver, Scheier, and Weintraub, 1989; Litman, 2006; Abreu-Sánchez, Rojas-Ocaña, Rodríguez-Pérez, & del-Pino-Casado, 2017). The COPE inventory consists of 66 items (not all these items are scaled). These items can be grouped into four categories of coping as proposed by Litman (2006); appraisal-focused (two scales with 8 items whose summative score range is 0 to 24), problem-focused coping (four scales measured by 4 items each with summative score range of 0 to 48), emotional-focused coping (four scales measured by 4 items each with summative score range of 0 to 48), and avoidant coping (two scales with 8 items whose summative score range is 0 to 24) (Morrison and Bennett, 2009). The responses for each item are scored on a four-point Likert-type scale whose possible responses are 0, 1, 2, and 3.

Variables

The responses to the Likert scale were used to measure and score all the independent variables. The independent or predictor variable, SOC, has three components: comprehensibility (measured by 4 items with summative score range of 4 and 28), manageability (measured by 2 items with summative score range of 2 and 14), and meaningfulness (measured by 3 items with

summative score range of 3 and 21). The dependent variable, coping, was scored using appraisal-focused coping (summative score range is 0 to 24), problem-focused coping (summative score range of 0 to 48), emotional-focused coping (summative score range of 0 to 48), and avoidant coping (0 to 24). Based on the three constructs of SOC, three models were constructed in which the possible influence of the sociodemographic profiles of the respondents, including gender, age, previous training on coping, the number of years of practice (experience), and ethnicity, were used as moderating factors.

*Table 1**Dependent and Independent Variables*

The predictor variable	Outcome variable
SOC including:	Individual coping abilities, based on:
1. comprehensibility	1. Appraisal-focused coping,
2. manageability	2. Problem-focused coping,
3. meaningfulness	3. Emotion-focused coping,
	4. Avoidant coping

Assumptions

I assumed that job demands, and job resources are both related to the manageability, comprehensibility, and meaningfulness of an individual's work situation. The study acknowledges that the SOC is an important idea that helps an individual's ability to understand, decipher meaning, and manage stress in the most effective ways. The application of the SOC scale is useful in the assessment of the emergency physician's coping with stress in this study. It is also useful in the context of this study considering that physicians working in the emergency room are faced with complex situations that would result into stress thus the need to manage this stress. It was also my assumption that both variables SOC and coping with stress can be measured on different scales. The SOC scale is considered adequate in gathering the important data for verification of the hypotheses. CSA-2 is a useful tool that enables researchers to administer and manage the questionnaire easily. It was therefore assumed that when used, the tool can effectively give the results of the impact on the variables.

Scope and Delimitations

The scope of the state involved the aspects that facilitate the ER physicians to develop the sense of coherence to cope with stress. Therefore, the major focus of the study was on the three elements (comprehensibility, manageability, and meaningfulness) of SOC that formed the basic

variables that impact coping with stress. The study combined the application of these variables in the healthcare settings to influence the level of stress and the ability of the physicians to perform. The population of the study included the physicians working in the emergency rooms in the healthcare facilities.

Limitations

This study had some limitations related to the use of self-reports. Since the participants were reporting about themselves, they could have been biased and could have exaggerated information. For instance, a respondent could want to create a great impression of himself or herself by presenting the ideal coping and SOC profile. However, the limitation was reduced by the promise of confidentiality and anonymous response to the questions. Non-response were minimized by following up with the respondents closely through reminder emails, phone calls, and rescheduling of missed interviews.

Significance of the Study

This study focused on the significance of SOC on emergency physicians' ability to develop coping strategies to deal with work stress. Currently, there is limited information about this issue. This study addressed the gap on the relevance of SOC among emergency physicians coping with stress. The research explored the relationship between the various components of SOC and emergency physicians' coping with stress. Thus, the study provided a deeper understanding of the topic using the three dimensions of sense of coherence.

Nilsson, Andersson, Ejlertsson, and Troein (2012) stated that there is limited research into finding a direct link between the specific constructs of SOC and the components of coping with stress. This study filled this gap in the literature by investigating the link between the variables based on the ability of the emergency physicians adopting strategies to deal with stress.

The study sought insights into how emergency physicians adopted different emotion-focused strategies to deal with emotions at occupational stressors. The findings of the research were used to propose recommendations for policy development and raise awareness for emergency physicians on the appropriate ways of coping with stress. Comprehensive analysis of the SOC constructs and coping dimensions contributed to theory development. The information gathered from the study will be shared with the relevant parties through training and capacity-building occupational practices. The study provided a deeper understanding of the problems affecting emergency physicians. The increase in awareness will help implement support services that can, in turn, help improve the emergency physician's well-being and to transfer those benefits to service quality.

Summary

The roles played by emergency physicians are stressful and contribute to burnout. Therefore, the SOC is important in the improvement of the physicians' well-being. Many studies conducted have established the ability that the physicians working in the emergency room can develop to enhance their performance. The most important aspect that needs to be considered is coping with stress since working in the emergency room setting is complex thing; often very tiresome and involving. Three aspects of SOC have been identified as effective to help physicians manage stress in the emergency room. The three include comprehensibility, manageability, and meaningfulness. Coping with stress on the other hand entails strategies related to appraisal-focused coping, problem-focused coping, and emotion-focused coping, SOC impact these coping with stress strategies to help physicians withstand stress in the emergency rooms.

Chapter 2 explores the previous studies and provides insights into what other researchers have found on the concepts under study. The Chapter 3 is the methodology chapter, which

presents the methods used to collect and analyze the data. Chapter 4 presents the findings of the data analysis. Chapter 5 presents the recommendations and conclusions to the study.

Chapter 2: Literature Review

Introduction

This research sought to explore the stress problem among ER physicians and how it is associated with SOC as the basis for coping with the problem. Studies conducted in the U.S. linking SOC to an emergency physician's coping with stress are currently limited. However, the international literature may be relevant to urban and suburban populations in the U.S. which is the highest compared to rural population. The literature establishes the relevance of the problem by presenting the notion that ER physicians are vulnerable to stressful situations and that their SOC levels determine their coping with stress. According to Carlton, Holsinger, and Anunobi (2016), SOC involves three key elements: comprehensibility, manageability and meaningfulness. Studies by Antonovsky and Sagy (1986) and Sarenmalm et al. (2013) demonstrated how SOC is related to coping with stress. However, the majority of previous studies did not explore the key constructs that promote individual ER physicians' ability to cope with stress.

This chapter explores previous studies on the present topic as well as explores the prevalence of SOC to cope up with stress among the ER physicians. The research will adopt a theoretical perspective aligned with the salutogenic theory to demonstrate the relationship between SOC and ER physicians' coping with stress.

Chapter 2 is divided into various sections that include the literature search strategy section, which provides the basis for understanding how the research was conducted on the topic. The second section involves the theoretical perspective that forms the basis for this research. The third section explores the stress prevalence among the ER physicians, while the fourth section explores the SOC concept in detail. Other key sections include the relationship between SOC and

coping with stress as well as the related literature on the key variables or concepts. The last section of the chapter presents a summary of the major themes in the literature.

Literature Search Strategy

This research makes use of previous studies on the topic. The following databases were used: EBSCOHost, ProQuest, Medline, and CINAHL Plus. To retrieve relevant articles, the following keywords were used: *sense of coherence, stress, emergency room, physicians, coping with stress, salutogenic theory, manageability, comprehensibility and meaningfulness*. The scope of the literature review was limited to peer-reviewed articles, seminal literature, and scholarly books published within the last 5 years. Seeking only the latest studies was intended to identify the latest coping strategies within ER settings and to demonstrate how physicians can use these findings to improve their coping abilities. Since SOC is not a relatively new term and has been adopted in other studies to promote health and well-being, the depth of this research provides an additional view of the role of SOC in enhancing the work of healthcare providers.

Theoretical Perspective

Salutogenic theory emphasizes on how positive attributes of an individual are linked to the individual's ability to adapt to life stressors (Ezeamama, Elkins, Simpson, Smith, Allegra, & Miles, 2016). Salutogenic theory was first established by Antonovsky (1987) as the basis for exploring health in terms of personal attributes or emphasizing on resilience. Antonovsky (1987) further presented the salutogenic orientation as a "movement away from traditional pathogenic perspectives which focus on illness, towards an alternative way to better understand factors that keep people healthy." This framework was based on exploring the reasons why some people manage to stay healthy while others fail to cope with stressful situations (Goldberg et al., 1996). According to Antonovsky, (1996), the key goal of the salutogenesis theory (a theory based on the

premise that people constantly battle with hardship) is to promote the role of health-promoting and protective factors in stress or disease situations. The theory further presented the notion that personal attributes are linked to the successful adaptation to life stressors which leads to salutogenic outcome (Antonovsky, 1987). Consequently, the theory can be closely associated with an individual's coping with stressful situations while others fail to cope based on their SOC levels. The theory argues that a variety of factors exist that influence stress, health and coping.

Antonovsky suggests that various stressors may create a variety of consequences on individuals and groups. The salutogenic theory makes major propositions and hypothesizes that SOC improves the individual coping abilities, which promotes health (Richardson and Ratner, 2005). The theory can, therefore, help in understanding the relationship between SOC and the ER physicians' coping with stress based on the assumption that high SOC levels lead to improved coping abilities. According to Brady (2017), SOC is associated with individuals' well-being and life satisfaction, which are key ingredients for improved coping with stress. Thus, higher levels of SOC would empower the physicians to manage stressful situations in the ER. The salutogenic theory further emphasizes health-promoting attributes as well as resilience, which enhances the chances of the physicians managing their external and internal environment better (Antonovsky, 1987). A recent study suggests that the salutogenic theory focuses on the protective and health promoting aspects that reduces the impact of stress (McCuaig, Quennerstedt, & Macdonald, 2013). From this theoretical perspective, several key assumptions can be made for this research as follows:

- Individuals manage stress based on how they perceive stress which further relates to the comprehensibility construct of SOC.

- That high SOC levels increases the chances of managing stress among the ER physicians.
- ER physicians have the capability to regulate their reactions to stressors by engaging in positive thoughts.
- ER physicians with adequate resources have improved chances of managing stressors.
- The extent to which individual physicians in ER assign emotional value to stress impacts their commitment and engagement.
- SOC further provides both internal and external resources as a means through which ER physicians can identify stress, understand and cope in effective ways.

The salutogenic theory is selected as the main theoretical perspective to guide this research since it emphasizes on the individual ability to manage stress, which also relates to the concept of SOC. Hence, it is critical in establishing recommendations or empowering ER physicians to manage their conditions. The SOC constructs as presented through the theory also promote knowledge or understanding on ways in which the ER physicians cope with the stressful situations that are common in their settings. According to Faresjo, Karalis, Prinsback, Kroon, and Lionis, (2009), salutogenic theory focuses on the key resources that help in improving or maintaining health thus providing the basis for how individuals cope despite stressful situations and hardships. The ability to implement the salutogenic way of living defines how individuals perceive stressful situations and provides coping tools for an improved quality of life, as well as mental well-being (Hart, Wilson, & Hittner, 2006). Antonovsky (1987) explored why some individuals stay healthy despite stress and hardships. He found they were able to do so by possessing and focusing on thought patterns that foster health and well-being rather than focusing on the determinants of disease. This finding provides the philosophy behind the

salutogenic theory. SOC determines the ability to resist stress in salutogenic theory to enhance better quality of life and effective coping with stress (Tei et al., 2015). Salutogenic theory links SOC as an effective aspect that enhances the individual's ability to comprehend a situation, as well as adopt problem-solving solutions (Langeland et al., 2013). In this regard, it enhances the chances of physicians understanding their working environments, the associated challenges, and how they perceive the challenges as meaningful, comprehensible and manageable. Salutogenic theory as the theoretical perspective for this research argues that SOC is critical in shaping the individuals' view of life, as well as the ability to respond to stressful situations (Langeland et al., 2013).

The salutogenic theory also assumes that SOC is exemplified through attitude, behaviors and emotional levels to promote wellbeing, which accounts for the strong relationship between SOC and coping abilities (Yeh, Huang, & Chou, (2008). Antonovsky (1987) suggested that the degree to which individuals perceive stimuli as threatening or non-threatening determines their ability to effectively address the situation. A review of salutogenic model demonstrates that the theory emphasizes positive attributes which enable individuals in the context of a stressful work environment to successfully adapt to the stressors in the workplace (Langeland et al., 2013). Therefore, the salutogenic theory tends to promote the physicians' coping with stress by adopting protective and health-promoting factors rather than solving the risk factors. The salutogenic theory further links the individual coping abilities with improved self-esteem, preventive health orientation, social support, and intelligence, which suggests that the ER physicians with such resources have better chances of dealing with stressful situations (Xiao et al., 2014). Crane (2007) argues that the salutogenic theory is based on the assumption that strong SOC levels stimulate or promote the individual's adaptation to stress and ensure active engagement in life.

Similarly, Adriaenssens, De, and Maes (2015) point out that the ability to have positive and active engagement in life helps in shaping stress perception, as well as predict the individual's coping abilities with stress.

The salutogenic theory identifies SOC as the key aspect that determines the individual's coping with stress (Ekwall, Sivberg, & Hallberg, 2007). Therefore, the rationale for selecting the theory is supported by the idea that it demonstrates the relationship between stress and coping abilities within the context of the ER thus using the SOC levels to predict their coping with stress.

Stress Prevalence in ER Physicians

Recent studies report high prevalence rates of stress in the Emergency Departments (Hutchinson, Haase, French, & McFarlane, 2014; Schooley, Hikmet, Tarcan, & Yorgancioglu, (2016). For example, Schooley, Hikmet, Tarcan, and Yorgancioglu (2016) recently compared burnout across 250 emergency professionals. These authors reported very high emotional exhaustion depersonalization scores across all occupational groups in the ER. In research by Taylor, Pallant, Crook, and Cameron (2004), it was postulated that the prevalence of stress in ER physicians is based on the complexity of their roles and high chances of burnout due to workload among other problems. ER physicians serve patients with a variety of critical health problems, which creates the need for the physicians to deliver patient-centered care in order to achieve positive outcomes (McCubbin, 1998). The prevalence of stress among the physicians is also influenced by the problem of physician to patient ratio, which further increases the chances of burnout. Saijo et al. (2013) argues that the level of physician stress and burnout also varies based on the location. The researcher argues that deployment locations where physicians serve patients

in urban areas have higher prevalence of stress compared to those in rural areas, which are characterized by lower cases of patients in the emergency room.

Bragard, Dupuis, and Fleet (2015) have also argued that ER physicians show elevated burnout levels owing to environmental and personal issues, which tends to affect the quality of their work life. The individual's inability to cope or manage emotional stress in the workplace creates feelings of failure and exhaustion (Mittelmark et al., 2017). Different indicators can be adopted to determine the effects of stress among ER physicians such as emotional exhaustion, negative attitudes towards their role and reduced sense of personal accomplishment. Stress also leads to poor job performance, lack of motivation and energy loss (Schooley et al., 2016). Furthermore, emergency departments involve multiple sources of uncertainty, work-time pressures and high patient volumes leading to long work schedules. The prevalence of stress among ER physicians is also influenced by the need to make critical decisions relating to the patients' health during life threatening and traumatic events without complete information. ER physicians operate under mounting pressure which results to burnout and increased stress levels (Bragard, Dupuis, & Fleet, 2015; Li, 2015).

SOC Concept

Antonovsky (1987) conceptualized SOC cross-culturally as "an orientation that influences the extent to which individuals perceive the world as comprehensible, manageable and meaningful." The research further linked SOC as key to understanding an individual's response to stress, improved well-being and life satisfaction by arguing that higher levels of comprehensibility, manageability and meaningfulness have a significant impact on the levels of SOC. Antonovsky (1979) adopted the salutogenic model to describe the SOC concept by presenting the notion that SOC is a personality disposition such that it is shaped by an

individual's life experiences. Antonovsky (1979, p.19) described SOC as a global orientation through which the extent of pervasive endurance and dynamic confidence are manifested. The author also noted that SOC represents the stimuli that drive how the internal and external environment is structured. He further adds that SOC represents the resources available to a person to aid in dealing with the demands associated with the stimuli.

The SOC concept defines how individual cope with stress, which can be positive or negative. Li (2015) hypothesized that the SOC concept promotes three key coping strategies among ER physicians which involves problem-solving, social support-seeking and avoidance. Li (2015) further argued that the SOC concept is also associated with interpersonal relationships and can help in predicting individual coping strategies.

SOC levels are determined by the SOC scale, which has been extensively used in different studies to verify the hypothesis that individuals with higher SOC levels have improved coping abilities with stress as well as improved health (Kretowicz & Bieniaszewski, 2015). Li (2015) argued that SOC is a key concept that can be adopted in different situations to demonstrate the individual coping or managing stressful situations. According to Li (2015), the SOC concept is founded on emotionality since it influences how individuals perceive situations or interpret them in a positive or negative way.

Antonovsky (1987) adopted the SOC scale to verify the hypothesis that individuals' SOC is strongly associated with health; however, SOC is more focused on the psychological aspects of individuals. The SOC concept is also associated with fewer health-related problems; hence, serves as a key predictor of good health. SOC provides a sound theoretical basis to demonstrate coping with stress as well as enhance the quality of life. The SOC concept uses its three dimensions to understand how individuals have the capacity to deal with stressors and maintain

good emotional health. SOC is linked with prevention, explaining how some individuals remain healthy under severe stress conditions. In a cross-sectional study done by Lerdal, Fagermoen, Bonsaksen, Gay & Kottorp (2014), SOC is presented as a concept in the salutogenic theory created by Antonovsky (1987) and identified as "a major determinant of maintaining one's position on the health/disease continuum and movement toward the health end." SOC concept is supported by the idea that health promoting resources tend to strengthen resilience and enhance the individual's ability to develop positive subjective health. Comprehensibility, manageability and meaningfulness, grounded in the salutogenic theory, are the three key dimensions of SOC that can help create an understanding of the individual's social skills, concept of self and provide a portrait to their level of consciousness (Lewis et al., 1994).

Comprehensibility. This dimension relates to the cognitive aspect of individuals and identifies the individual's ability to seek logical connections, order in the world and interpersonal relationships. Comprehensibility is critical in the emergency context since it offers a chance to measure their trust in life's predictability (Kikuchi et al., 2014). Additionally, it increases the chances of understanding how people control their emotions and thoughts. In relation to coping with stress, comprehensibility dimension enhances the physicians' ability to understand the situation and how to control their emotions/negative thoughts in order to manage the situation. In this regard, the dimension determines how individuals respond to different risk factors that cause stress in their workplace. The comprehensibility dimension relates to the individual's thoughts or thinking in regard to the stress problem, which can further be adopted to predict his or her coping with stress based on his comprehensibility rates. As a key part of SOC concept, comprehensibility dimension improves an individual's coherent understanding of the world as well the thoughts and emotions of others (Antonovsky, 1987).

Meaningfulness. Serves as the motivational aspect of SOC, which influences the individual's ability to respond to a given challenge. Meaningfulness dimension is critical to healthcare professionals since they are vulnerable to different critical situations in their workplace; this tends to affect them negatively often leading to burnout resulting from a heavy and stressful workload (Rice, 2012). The Meaningfulness dimension further demonstrates the individual's ability to be happy with life and derive meaning from life's critical situations, which enhances the chances of resolving or coping (Antonovsky, 1987). In this regard, how individuals define the meaning and purpose in different stressful situations facing them determines their coping with stress and achieving improved outcomes. Meaningfulness focuses on the key characteristics of difficult situations. This can help individuals to define challenging situations as meaningful and could have a positive impact such as being able to better serve patients with urgent needs and respond appropriately to ethical issues in the emergency department. The Meaningfulness dimension improves the chances of a person's ability to comprehend and face stressful situations as well as resolve them based on their ability to perceive meaning and purpose (Lindström & Eriksson, 2005).

Manageability. This dimension represents the instrumental aspect of SOC and involves the individual social competencies or the sense of personal competence to use the required resources in coping with challenging situations (Kikuchi et al., 2014). The dimension also incorporates how individuals faced with stress can manage it by developing a positive outlook on life rather than having a negative perception of the situation. The Manageability aspect in SOC determines how individuals cope with the stressful situation based on their competency levels. This includes both personal and social competencies, such as interacting with different people as well as adopting the available resources necessary to manage stress (Malinauskiene et al., 2009).

Improved manageability and comprehensibility states improve the overall SOC score, which leads to improved outcomes. Manageability dimension depends on the meaningfulness dimension that defines how individuals understand or establish the meaning of different situations facing them. Improved meaningfulness of physicians in the emergency department promotes the chances of managing stressful situations. ER physicians are expected to possess this attribute in order to enhance their coping with stressful situations to achieve positive outcomes such as improved well-being and success in their roles. Henceforth, manageability dimension serves as the strongest predictor of ER physicians' coping behavior with stress followed by meaningfulness and comprehensibility dimensions. Furthermore, there is evidence that improved levels of SOC among ER physicians could be related to better coping abilities and positive perception of the situation.

A majority of the studies evaluated in this research such as Sharma, Atri and Branscum (2012) acknowledge that high SOC levels improves the individual's self-esteem or self-worth, which further shapes their response to the stressors. Positive self-esteem serves as a protective factor that leads to better social behavior and health as well as reducing the impact of negative influences or stressors (Nene, 2006). Similarly, ER physicians who have low self-esteem tend to lack a defensive mechanism which limits their chances of coping with stress as well as maintaining an appropriate balance between perception of stress and an internal balance of enhancing their health or well-being. The SOC dimensions influence how physicians perceive stress in their lives/career. Positive perception and motivation promote coping abilities while negative perception limits their chances of effectively managing their situation (Miyata, Arai, & Suga, 2015). People with all the three strong dimensions have better chances of dealing with challenges in their life by developing a positive perception of stress/stressors.

Relationship Between SOC and Physicians Coping with Stress

Sharma (2017) acknowledges that there is a strong relationship between SOC and coping with stress. Physicians are expected to have higher levels of SOC in order to enhance their chances of coping with the stressful situations which are common in their settings. The prevalence of stress among ER physicians has also been identified as critical based on the idea that they serve patients with different problems requiring emergency care. According to Antonovsky (1993; 1996), people with stronger SOC remain healthier than other people even if they have experience of the same stressful event. A person with a strong sense of meaningfulness will experience a stressful event as a positive challenge that is worth the emotional investment and commitment. Saijo et al (2013), notes that the prevalence of stress among physicians is influenced by job burnout due to increased workload and poor physician-patient ratio. According to Li (2015), high levels of SOC promote health workers' coping with stress since they have improved abilities to comprehend or understand the stressors. Additionally, physicians with high levels of SOC have better ability to establish meaning of different situations in the ER which eventually improves their ability to manage the stressors. In this regard, people with strong SOC tend to perceive stress in a positive way rather than negatively, resulting in being more equipped to handle stress (Drageset et al., 2014). In research done by Kleiveland, Natvig and Jepsen (2015), it was noted that SOC impacts the quality of life and suggests that coping with stress improves quality of life and roles in ER.

Another key coping strategy that is influenced by strong SOC levels is “seeking avoidance” and plays a significant role in improving the physicians' well-being and life satisfaction while executing their roles in the ER. Seeking avoidance is one of the common approaches adopted by ER physicians since it is based on helping them identify the risk factors

of stress and establishing ways to avoid the stressors. Therefore, emergency physicians with a high SOC recognize stressors that are beyond their control and try to avoid them as much as possible.

Sharma, Atri and Branscum (2012) acknowledges that high levels of SOC serve as the foundation for improving the individuals' coping abilities while reduced levels of SOC limits the chances of individuals managing stress. SOC levels are determined by SOC scale, which also serves as a predictor to the critical care health worker's coping abilities within the ER (Yam & Shiu, 2003). The relationship between SOC and stress coping abilities have been applied and articulated in previous research studies such as Sharma, Atri & Branscum (2012) with a majority of the studies acknowledging that SOC levels determine how they cope with stress. However, the current study will be beneficial since it explores the SOC concept in detail based on the three key dimensions which determines how ER physicians can cope with stress.

Improving Coping Abilities Using Sense of Coherence

It is important to understand the emotions experienced in the workplace and how individuals regulate the emotions (Fisher and Ashknasy, 2000). Emotional labor is defined as the effort involved in regulating the emotional display at the workplace for the employee to meet the organization's expectations specific to their roles (Brotheridge & Grandey, 2002).

Organizationally based expectations or norms define which emotions employees should express and which emotions they should not express. To the extent that felt emotions (e.g., anger, frustration, sadness) conflict with context-desired ones, employees may perceive dissonance, and thus try to regulate their feelings in order to exhibit job congruent emotions (Zammuner Lotto, & Galli, 2003).

The ability to regulate emotional responses is thought to impact on perceived quality of working life, on workers' psychological wellbeing as well as on their performance (Naseem, 2018). This may be especially true within the context of service organizations (such as hospitals) which involve employee-customer interactions, with the emotions experienced by the employees influencing their face-to-face interactions with customers, and thus the quality of the service offered. In addition, healthcare professionals such as nurses and physicians are daily confronted with events involving others' (i.e., patients' and relatives') suffering, which are likely to generate highly negative and stressful emotions. The failure to successfully down-regulate negative emotions is a key risk factor for burnout, which is defined by emotional exhaustion, depersonalization and a low sense of personal work accomplishment (Schooley et al., 2016). Burnout is the result of chronic occupational stress, and its main consequences are reduced levels of work performance and desire to leave the job.

Sharma, Atri & Branscum (2012) acknowledges that high levels of SOC serve as the foundation for improving the individuals' coping abilities while reduced levels of SOC limits the chances of individuals managing stress. SOC levels are determined by SOC scale, which also serves as a predictor to the critical care health worker's coping abilities within the ER (Yam & Shiu, 2003). The relationship between SOC and stress coping abilities have been applied and articulated in previous research studies such as Sharma, Atri & Branscum (2012) with a majority of the studies acknowledging that SOC levels determine how they cope with stress. However, the current study will be beneficial since it explores the SOC concept in detail based on the three key dimensions which determines how ER physicians can cope with stress.

Previous studies acknowledge the ability of higher SOC levels enhancing coping abilities with stress at the workplace. It has been demonstrated that healthcare staff are vulnerable to

different stressors in their workplace (Schooley, Hikmet, Tarcan & Yorgancioglu, 2016).

However, different approaches can be adopted in enhancing the staff coping abilities to achieve positive outcomes both in the workplace and in their personal lives. Improving the physicians' coping abilities with stress can be achieved through motivating them towards managing their condition. Motivation further impacts how the physicians perceive stress thus improving their chances of managing stress. SOC promotes the individual and collective ability to have positive views of the challenges in life and manage their problems effectively. According to Ekwall, Sivberg, and Hallberg, (2007), SOC increases the chances of caregivers identifying stress as meaningful, manageable and comprehensible, which further improves the chances of achieving a more positive outlook on life's challenges, which can lead to better mental and physical health.

Coping with stress, according to Silver (2013), entails a person's dynamic cognitive and behavioral determination to identify precise internal and external strains that are perceived as excessively demanding or beyond the person's resources, which is a huge characteristic in the development of a strong SOC (Yam & Shiu, 2003). The first approach of coping with ER stress is to come up with ways of identifying the forms of stressors afflicting the physician and finding the meaning of these stressors in the individual's well-being. Stressors include those that can be provoking or intimidating and often occur when physicians are highly stimulated by stressful events in the ER such as an accumulation of work. The health care provider decides whether the coping resources and choices available are adequate to manage the situation or not based on the strength of her SOC (Mittelmark et al., 2017).

Schooley et al. (2016) describe several coping strategies used by healthcare professionals, with the central theme being stress management. Many coping strategies are developed in an effort to manage stressors by physicians with a strong sense of coherence. These efforts include

information-seeking, inhibition of action, and direct action. A direct action, according to Mittelmark et al. (2017), is as a way of managing stress through the application of available resources. Schooley et al. (2016) identify turning inward as a common coping strategy that can help to understand the difficulty of their inner self for sustenance and security. Therefore, it is believed that coping techniques may help physicians with a strong SOC to find meaning and to manage their current stress. Miyata et al. (2015) also states that another coping strategy involves fulfilling the spiritual needs on a daily basis. A strong SOC has the ability of increasing the coping ability of a person through internalization of events. For a majority of the community health workers, religious or spiritual coping is a vital part of their coping behavior. Strong SOC is perceived as the key component of being able to provide community health workers with a framework to cope with work-related struggles (Li, 2015). Kretowicz and Bieniaszewski (2015) further state that there is positive feedback from the use of certain coping strategies, which are helpful in alleviating mental distress among managerial nursing staff. Their article also cites that support networks and other resources work together in providing coping strategies for physicians as they allow contact and communication between physicians, which are important in helping them to regain composure after a stressful engagement.

The literature reveals that depersonalization and emotional exhaustion is a function of occupational stress resulting from the lack of job resources and job demands. A succinct review also reveals that ER physicians who experience stress due to job demands that include assignment to an unfamiliar role, working overtime, increased responsibilities and dealing with crises also experience depersonalization and emotional exhaustion. Furthermore, the written work on this topic illustrated that ER doctors who possess strong SOC were had less records of

burnout and more engagement in the work, which suggested that a higher level of SOC results in a higher level of productivity among ER physicians.

One of the explanations provided for such a phenomenon is the predisposition and experience of stimuli from the environment in a positive manner. Furthermore, the literature suggested that these physical perceptions of stimuli were such that it made sense of the stimuli on a cognitive level. Therefore, the physicians with a high level SOC feel that they are in control of situations by surrounding themselves with adequate support networks. In addition, their perspective, stressful events appear motivationally meaningful and relevant. On the other hand, the ER physicians with lower levels of SOC experience hardships in structuring their world to be understandable, consistent and orderly. A majority of these doctors perceives most events as unmanageable and chaotic and they experience a higher stress level than other doctors the ER with a higher SOC. Another perception of emergency physician with weaker SOC is that they perceive themselves as lacking the resources necessary to meet the demands of their job.

Literature also establishes that these workers find life unexplainable when they are engaged at an emotional level, most situations are automatically perceived as stressful. Therefore, it is worth noting that personal resources that include a strong SOC play a critical role among emergency physician's experience of work engagement and work burnout. According to the literature, high stress levels are a result of the inability of emergency physicians to acquire the necessary skills to deal with stress; chief among them being a sense of coherence. Therefore, individuals with a stronger SOC are less vulnerable in stressful situations and less likely to lose their focus and composure in such environments. The findings also established a strong correlation between sense of coherence, health measures and psychological measures of health workers. However,

only a modest correlation has been established as far as a relationship with the physical health is concerned.

Hutchinson, Haase, French, & McFarlane (2014) and Schmitz et al. (2012) confirm that many emergency physicians who succumb to stress are unable to cope with work-related emotional issues, and that the risk of depersonalization tends to increase when an individual does not have the necessary instruments and emotional resources to cope with stress. The authors found that higher levels of stress are more commonly precipitated by traumatic life occurrences including crisis situations in the emergency room. Similarly, Richardson and Ratner's (2005) investigation showed that support networks that helped to prevent job disharmony, assist with greater conscientiousness, a higher ability to take responsibility and better educational performance of one's life course helped to reduce the likelihood of experiencing extreme stress. Additionally, Tei et al. (2015) found that emotional tools can help medical professionals to cope better with work stressors, facilitate recovery from situations that generate stress stimuli and can quickly correct the course of their succumbing to a stressful situation. A stronger SOC can be developed when enough personal resources are available to physicians working in the ER. Yeh, Huang, and Chou, (2008) argue that developing a strong SOC is the solitary approach to creating a sense of personal meaning. By developing a strong SOC, an ER physician could affirm his psychological well-being.

In the study by Urakawa (2012), it was also established that SOC was associated with psychological responses to job stressors. The study was conducted by studying Japanese factory workers and used the salutogenic model developed by Antonovsky (1988), which indicates that the SOC of an individual experiences the degree of persistence and consistent belief that the stimuli derived from their external and internal environments in their lives are predictable,

structured and explicable, which denotes the comprehensibility part of SOC. The author also denoted that the available resources for meeting the demands posed by the stimuli (manageability) are expressed by SOC. In addition, SOC expresses the extent to which such demands are worthy or challenges of investment and engagement (meaningfulness). Urakawa (2012) acknowledges observes that SOC participates in the modification of job stress responses such as the association of a strong SOC with protection of an individual from work stressors.

Depression, anxiety, fatigue, tension and a negative mood are some of the most commonly cited ER occupational stressors. It is argued that SOC has an opposite relationship with stress responses. Therefore, having a strong SOC reduces the effect of job stress on the psychological status of workers. Job stressors such a low support, job aptitude among males, job and job demand adversely affected self-rated health and stress responses. A previous review indicates a strong association between mental health and SOC (Eriksson et al., 2007). In this case, the inverse association of SOC with hopelessness, anxiety, perceived stressors and depression and the positive relationship with hardiness, optimism, social skills, self-efficacy, and self-esteem would suggest that workers with a stronger SOC tend to view their health more positively than workers with a weak SOC. The authors also established that the narrower concepts of SOC, which include manageability, meaningfulness, and comprehensibility, might affect a worker's perception of stress. Therefore, the authors recommended that maintaining a healthy life could be achieved by reducing the negative responses to job stress through an increase in vigor and SOC, as well as supporting the self-perceptions of workers. Eriksson et al. (2007) also demonstrated that there was a significant relationship between SOC and self-related health of healthcare workers. The researcher also explained the inconsistencies in reporting the

relationships by various studies as being associated with the differences in the characteristics of participants, as well as the tendency to include a small number of participants in a study.

The review in Table 1 on the independent and dependent variables indicates a positive relationship between a strong SOC and old age, as well as a job title. Urakawa (2012) based this association on the fact that older workers are more likely to receive appointments in managerial positions. In addition, Haratani (1993) attributed the relationship to the experience developed by having a higher job title as the position subjects a person to high job stress levels, which involved them to develop coping mechanisms. Poppius et al. (1999) contributed to the debate further by indicating that the workers with a consistent good status of mental health and can manage stress tend to be preferred in the selection for managerial positions. Furthermore, Stephens et al. (1999) claimed that it is reasonable to find a positive relationship between SOC and job titles as well as older age only if SOC is not an innate characteristic of an individual but is rather developed as a learned sense acquired through various life experiences.

According to a study by Horita et al. (2007), healthy workers reported a significantly higher SOC score the author indicated that these workers also had a high level of work and life satisfaction. A review of quality of life and SOC by (6) indicates that SOC as a resource directly enhances the worker quality of life by enhancing good perceptions, increased job control and a stronger SOC result in a worker having better subjective feelings. A weak SOC, on the other hand, has either a direct relationship with a negative psychology of well-being or an indirect association with the development of problems related to lifestyle including obesity, smoking, and lack of exercise. These studies demonstrated that the enhancing the SOC of workers is essential for health in daily life and at work (Nakamura et al., 2003). According to Tomotsune et al. (2009), a strong SOC is usually present in older individuals, individuals with a larger income,

those occupying the positions of managers, and a higher percentage of men. Tomotsune et al. (2009) attributed the stronger SOC to such attributes as increased responsibilities, which exposes an individual to various experiences. Therefore, the socio-economic status, which has an effect in the long term, also influences the development of SOC. Therefore, Eriksson & Lindstrom (2007) recommended the improvement of health education programs to focus on improving SOC and further development of worksite intervention programs.

Healthcare providers with a strong SOC perceive life as being meaningful, have more inner peace and have better chances of having a positive outlook towards life, which keeps them focused in their work environment (Ekwall, Sivberg & Hallberg, 2007). The implications are that management teams of the ER need to conduct a careful process addressing and providing education of occupational stress among emergency physicians to prevent burnout. The burnout process appears to progress slowly from an initial depletion process of emotional resources extended to emergency physicians. Further manifestation of a deteriorating SOC includes active cynicism and a negative attitude towards recipients of ER services. The culmination of the process is impersonal treatment of patients who are then perceived as impersonal objects. Therefore, organizations are encouraged to provide enough support resources to prevent distress in emergency physicians. Furthermore, it would greatly benefit organizations to consider the different levels of SOC among emergency doctors in the designation of roles. Cultivating a stronger SOC among emergency physicians should be of top priority to the health care management team in an effort to enable emergency physicians to understand their important contribution. Such an effort could also culminate in elevating the confidence in physicians, thus allowing them to believe they can manage any stressful situation. The established literature

reveals that individuals who gain a stronger SOC can begin viewing their work as a challenge that is worth investing their energy.

In another study by Van der Colff & Rothmann (2009), the relationship between occupations stress, coping, burnout, work engagement and SOC for a registered nurse was investigated. The authors conducted a cross-sectional survey and established that the depletion of emotional resources, as well as the feeling of depersonalization by the workers, had an association with stress associated with job demands, a lack of organizational support, a weak sense of coherence, and a coping style focusing on ventilation of emotions. Furthermore, the authors revealed that high levels of burnout were experienced with an additional workload among nurses. Personal accomplishment of burnout was negatively associated with organizational constraints. The authors also revealed that individuals with little experience and who experience complex scenarios related to control, workload, rewards, community, values, and fairness also experience a high level of fatigue and burnout. Therefore, healthcare quality improvements should be designed with the intention to improve the safety, quality, and delivery of patient care while also synergizing these efforts. According to Horita et al. (2007), personality traits have a significant role to play in management and burnout etiology in the healthcare workplace. An internal locus of control, self-esteem, and optimism has a protective effect against burnout similarly to resilience and sense of coherence. Van der Colff & Rothmann (2009) argue that the concept of resilience, which signifies the ability to withstand life circumstance of a high adverse nature, and the sense of coherence, which denotes the tendency by an individual to view the world as a relatively predictable, consistent, manageable and understandable, are overlapping constructs to a large extent. The overlapping nature of the concepts is attributed to the reliance of both concepts to the definition by the ability to cope with challenging circumstances, as well as

the protective effect against burnout and resistance to stress. Another study by Van der Colff & Rothmann (2009) indicates that important personality predictors for burnout developed include the disposition of coping strategies, an ability to cope with different workplace stressors, individual personality characteristics associated with resistance to burnout including a high degree of self-esteem and an internal locus of control. A strong SOC was related to burnout and work engagement in that individual with a strong SOC recorded lower level of depersonalization and exhaustion. On the other hand, individuals with a lower SOC recorded a high level of depersonalization and exhaustion. In addition, the study established a positive correlation between SOC and work-engagement as well as personal accomplishments. Individuals with a high SOC recorded a high level of personal accomplishment and work engagement (Van der Colff & Rothmann, 2009).

SOC is an essential aspect of experiencing high-quality life as it facilitates the level of utility that a person experiences from the daily activities performed each day. Moreover, the social cognitive theory provides a description of the implication of the interaction between persons, environment and their behaviors. This theory of health is composed of the element of self-efficacy and outcome expectation of the result is essential in understanding the implications of a stressful environment on both the work quality of physicians as well as their health outcomes. Moreover, Eriksson and Lindstrom (2007) assert that healthcare professionals working in the emergency departments require effective stress-based coping strategies that is depicted in their sense of coherence. This assertion indicates that physicians with a strong SOC are able to deal with workplace stress that is associated with the emergency department because they have effective stress coping strategies. The theory of planned behavior based on the self-efficacy of a person affects the health behavior of that person since the outcome of the result can

either be positive or negative. As such, based on the theory of planned behavior, physicians in the emergency department must implement the self-efficacy techniques that are showcased in their health outcomes. In this case, self-efficacy is enhanced through the implementation of coping strategies that focus on the reduction of stress experienced in the workplace. The expected results are measured in the form of patients' outcome (reflects the quality of a physician's work) and individual health status (reflects the health status of the physician based on the associated impacts of stress on physical and mental health). In this case, positive results imply a high degree of self-efficacy. Nonetheless, the theory of reasoned actions is based on collective efficacy existing among individuals' focus on the collective effort in dealing with stress as the primary coping strategy. This basis of the theory is on the assertion that collective work ethics and teamwork form a solid basis for the establishment of a healthy work environment that undermines the implication of workplace stress on individual physicians. This theory is built on the effective application of self-discipline at a personal level to provide the required team support and collective work ethics as an organizational culture.

The three theories emphasize the need to implement mind and body training in mitigating the impacts of workplace stress. These theories are founded on the value of applying emotional intelligence in dealing with patients and colleagues, applying the cognitive and acquired coping strategies when dealing with a stressful situation, when under pressure and application of resilience. The resilience aspect is essential in facilitating sustainability in terms of health and work quality. The ability to work under stress is made possible through the application of resilience.

Summary

ER physicians can improve their SOC levels by adopting approaches that will help resolve existing problems thus reducing their stress levels and helping to prevent burnout. This approach plays a significant role in achieving positive outcomes since the strategies adopted are based on the stressors identified. Additionally, SOC influences individuals to seek social support as a means of managing stress since individuals with a high SOC recognize when pressure is high and identify coping methods such as support groups. However, their SOC level is also based on the way they understand and define the meaning of their situations. Social support further depends on the ability and inclination for ER physicians to seek support in their colleagues or professionals on challenges at work.

The literature demonstrates the key association between SOC and physicians' coping abilities by presenting the notion that high SOC levels improve the physicians' coping with stress in the emergency department. SOC involves three key dimensions that determine the individual coping with stressful situations. The key dimensions identified in the study are comprehensibility, manageability and meaningfulness. The comprehensibility component of SOC theory defines the extent to which events are viewed as creating logical sense based on their structure, consistency and order. The manageability component of SOC determines the level to which individuals feel they can cope with stressors while meaningfulness defines the extent to which people feel that challenges such as stressors are worthy of commitment and life makes sense. Comprehensibility determines the extent to which ER physicians understand stressful situations and how they perceive them as either critical or less important. This component promotes the chances of ER physicians having a positive perception of the stressful situations facing them.

In conclusion, the literature review included different key articles. The theoretical perspective section identifies the salutogenic theory as the basis for this research. The theory is based on exploring how individuals manage to stay healthy in stressful conditions and presents SOC as the basis for determining the individual coping with stress. The research further demonstrates that ER physicians have higher prevalence rate of stress owing to risk factors such as a poor outlook and burnout in the workplace. According to the literature reviewed, a majority of the researchers confirm that physicians must have the ability to perceive stress positively in order to enhance their chances of managing it and achieve positive outcomes. The research data demonstrates the high SOC levels enhance the chances of physicians managing stress leading to better overall health and a sense of well-being.

Chapter 3: Research Methodology

Introduction

In Chapter 3, I cover the methods and processes used in the collection of data and its analysis. This research was designed to explain the relationship between SOC and coping with stress using the case of ER physicians. The following sections discuss the research design, its rationale, methods of data collection, and data analyses approach. Ethical issues considered during the research are also discussed.

Research Design and Rationale

The quantitative research approach was appropriate for addressing the relationship between SOC and coping with stress among ER physicians. A quantitative research method was advantageous because it allowed a flexible approach to data collection through the type of questions and other associated tools used (Vogt, 2011). This research used a quantitative, cross-sectional design.

This study used a quantitative research design because it is useful because it eliminated the shortcomings associated with highly descriptive data, such as confusion and the challenge of interpreting the data into usable facts. I chose to use a quantitative design because I wanted to use numeric data for the study. Since quantitative methods are deemed data condensers, they can eliminate crucial information from being collected. Therefore, well-structured data collection tools designed to deal with the deficiencies and ensure that the study addresses the research problem become paramount. Bryman (2015) indicated that a quantitative research approach was useful in analyzing problems facing society because quantitative techniques use a structured form while qualitative techniques use an unstructured form and collect descriptive data.

Additionally, this study used a cross-sectional survey study design to answer the research questions and test the hypotheses as a snapshot in time. This research technique was used within a specific and significant population over a specified period. This study used a cross-sectional survey, as the researcher used the survey questionnaires to collect data about issues based on the perception and opinions of the defined variables [word missing?] (Lynn & University of Essex, 2005).

The selection of the quantitative, cross-sectional design was chosen after evaluating other research strategies and their potential results in relation to sense of coherence, which used the quantitative, survey-based study design. The main reason for choosing the quantitative, cross-sectional study design is it would survey ER physicians over a given period to estimate their SOC and to evaluate their coping with stress related to the pressures of their work through fieldwork survey. The selection of quantitative, cross-sectional design was also justified because it provides a platform for getting direct responses from participants and gathers first-hand data that describes the relationship between the study variables. Even though the longitudinal survey study design's quality is determined by the respondents' ability to comply and provide honest responses, the generated data was used in the obtaining credible inferences from which an objective conclusion is drawn (Lynn & University of Essex, 2005).

The primary advantage of using a quantitative, cross-sectional survey study approach was that the research is conducted on a sample drawn from the affected population. This implies the assessment of SOC, and coping abilities of ER physicians was conducted by full time ER physicians, and the collected data were drawn from real-time events in emergency rooms. Such an approach increases the external validity of the study. The disadvantage of using this design is that it is based on a quantitative design that eliminates the use of qualitative data collection and

analysis approaches that may be essential in the collection and analysis of descriptive data that cannot be quantified (Lynn, 2009). Also, this design is a snapshot in time thus does not lend itself to establishment of temporal relationship between the variables and thus is not good for establishing cause-effect relationship.

Study Variables

Variables are the measurable concepts of a study. A standard study that seeks to establish the relationship between concepts has two forms of variables, the dependent and the independent variables.

In this case, the study sought to establish the relationship between SOC and coping with stress. As such, SOC is the independent variable while coping with stress become the dependent variable. SOC has three components that are a significant aspect of the independent variables. These variables are comprehensibility, meaningfulness and manageability. A nine-item scale—measuring manageability, comprehensibility and meaningfulness of work—was seen as having a good internal consistency with Cronbach's alpha of 0.83 where Items 1, 6 and 9 measure the subdimensions of comprehensibility while items two and eight measure the subdimensions of meaningfulness. The coping ability of physicians was measured using a coping scale, and it has three components that form primary constructs of the dependent variables. These variables are; emotion-focused, appraisal-focused, occupation-focused, and problem-focused coping strategies.

Population

The target population of this study was physicians in the emergency department in health institutions across United States. This population comprised of a group of medical doctors who provide critical medical care to patients demanding emergency medical attention. The study

covered at least 1-month period, and it was observed on the outlined ethical standards of research. The study commenced after the researcher obtained the Health Research Approval (HRA) from the institution under investigation as it is a necessity in researching a population that works for the Exact Data Service along with Institutional Review Board (IRB) approval from Walden University.

Sample, Sample Size and Sampling Procedure

According to Saunders (2007), sampling techniques provide various methods that allow the researcher to use a small quantity of data derived from a small group of participants rather than all the possible cases. The participants were selected from a group of ER physicians from ten or more health facilities across United States that give permission to participate in the study. From these ten or more facilities a convenience sample of ER physicians was approached for completing the questionnaire. In calculating the quota convenience sample for this study G*Power has been used. Since multiple regressions was used, an effect size of 0.10 (medium) was assumed with an alpha of 0.05, Power (1 – beta) of 0.80 and number of predictors as three, the sample size was obtained as 114. This was inflated by approximately 20% to accommodate any missing responses to arrive at a sample size of 140 participants. ER physicians at the selected facilities were contacted until the quota of 140 surveys was met.

Procedure for Recruitment, Participation, and Data Collection

The participants were identified by contacting the hospitals' emergency departments. Consent form and research briefing documents were sent to the certified contacts of the ER physicians purchased from Exact Data Company, in addition to the health facility to which the request for study participation was sent after presenting this proposal to the ER physicians in weekly conference organized by ER department Northwestern. The consent form informed

inform the respondents that the participation was based on voluntary participation and that they had no compulsion or obligation to take part in the study. Moreover, the consent informed the respondents that they could withdraw from the study whenever they want. If they agreed to take part in the study, they were directed to send a signed consent form back to the researcher. The briefing forms informed the participants of the research aims, objectives, and the manner in which the data was used. The forms were sent to the selected participants.

Once the participants have accepted to participate, a questionnaire was sent to them via email. The questionnaire contained demographic information such as gender, age, the number of years of practice, and ethnicity. In addition, the questionnaire contained questions on the constructs of SOC and coping. The respondents were asked to fill out the questionnaire and send them back to the researcher within a week. A reminder email was sent to the respondents in case they fail to return within the stipulated time. Hospitals and ER physicians from those hospitals were contacted until the requisite numbers of 140 completed questionnaires were obtained.

Ethical Considerations

As this research involves seeking the opinions of people, the researcher had to apply for permission from the relevant authorities for ethical clearance. Ethical issues are an important aspect of research design. Their significance arises especially when sensitive issues touching on humanity are investigated. It is important that the research problem is relevant to all the people involved. This study was designed by the ethical standards defined by Walden University. Special consideration was paid to the National Health Service (NHS) defined code of ethics as well. As such, the researcher obtained ethical approval of the HRA as specified under the EDS provisions for research. The research and development department in charge of the institutes was also asked for consent to allow the study to be conducted among the employees. Permissions was

obtained from Walden IRB (Approval #.11-07-18-0411103) and EDS for the participating hospitals for conducting this study

Moreover, the study upheld anonymity and confidentiality of data, as respondents and their respective health institutions were assigned numerical means of identification. As such, confidentiality guarantees that the integrity of the collected data is being preserved as provided by the ethical code. Furthermore, respondents provided consent forms to indicate that their participation is voluntary following a detailed briefing of the nature of the study. Conclusively, respondents were notified that they can revoke their participation from the study whenever they choose (Vogt, 2011).

Instrument and Operationalization of Constructs

As mentioned earlier, this researcher used fieldwork research tools such as the questionnaire for the collection of quantitative data. The questionnaire contained structured and closed-ended questions to encourage the respondents to provide specific answers from the set of alternatives. The respondents did not have the freedom of providing additional information; they were guided to stay within the designated limits in answering the questions (Vogt, 2011). The questionnaire was formulated to collect precise data that is readily quantifiable and depicts the actual relationship between SOC and coping with stress among ER physicians. This information assessed the nature of the relationship that exists between SOC and coping with stress among ER physicians.

The questions used in the survey were checked against the research questions to enhance the collection of relevant data that addressed the objectives of the study. The research questions were consistent with the requirements of the objectives of the study.

The content validity of these two instruments was determined by a panel of four experts from my department to limit the problems with internal validity and reliability.

Operationalization of Variables

SOC was explored using three constructs. Comprehensibility (the component that defines the extent to which events are understood regarding creating logical sense based on their structure, consistency and organization) is defined by 4 items that refers to the perception of internal and external stimuli and how one understands information in a clear, coherent, and structured manner rather than disordered, unclear, random, chaotic, and unexplained manner. Each construct is measured on a 7-point Likert scale with a possible score range of 1 – 7. Since there are four items under ‘comprehensibility, the possible summated score ranges between 4 and 28. Manageability (a measure of and collection of features that provide support regarding the ease, competency, and speed that can be applied to discover, modify, configure, control, deploy, and supervise a system) was measured using two items on the 9-item SOC questionnaire both measured on a 7-point Likert scale with a possible score range of 1 – 7. The possible summated score ranges for manageability would be, therefore, between 2 and 14. Meaningfulness (a measure that defines the extent to which people feel that challenges such as stressors are worthy of commitment and that life makes sense) was measured using three scales with a possible range of scores on a 7-point Likert scale is 1 to 7 while the possible summated scores range between 3 and 21.

“Coping” with was assessed using the COPE inventory which consisted of 66 items grouped into four categories of coping i.e. appraisal-focused (two scales with 8 items whose summative score range is 0 to 24), problem-focused coping (five scales measured by 5 items each with summative score range of 0 to 48), emotional-focused coping (four scales measured by

4 items each with summative score range of 0 to 48), and avoidant coping (two scales with 8 items whose summative score range is 0 to 24). The responses for each item were scored on a five-point Likert-type scale whose possible responses are 0, 1, 2, 3, and 4

Data Analyses Plan

The data collected by Survey Monkey was analyzed and processed by SPSS Inc 19.0. Descriptive statistics involving measures of central tendency such as means and standard deviations for metric variables and frequencies and percentages for categorical variables were performed to provide a summary of the data. This is important in describing the characteristics of the sample population and study variables. Correlation and multiple regression analysis was carried out to determine the relationships between SOC and coping with stress among ER physicians (Lynn & University of Essex, 2005; Vogt, 2011).

Table 2

Research Questions

Research question	Data analysis method
RQ1: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of problem focused coping by the ER physicians?	Linear multiple regression
RQ2: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the ability of ER physicians to adopt appraisal-focused coping to deal with stressors?	Linear multiple regression
RQ3: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and ER physicians' ability to adopt emotions-focused coping to deal with stressors?	Linear multiple regression
RQ4: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and ER physicians' ability to adopt occupation-focused coping to deal with stressors?	Linear multiple regression

Bivariate and Multivariate Analyses

In order to answer these research questions, a bivariate analysis was conducted to find the correlation between SOC and coping whereby SOC constructs i.e. manageability, comprehensibility and meaningfulness are the independent variables while coping is the outcome variable. In addition, multivariate analysis including analysis of variance and multiple regression analysis was carried. In analysis of variance (ANOVA), differences in the means between male and female ER physicians with respect to coping were analyzed. Age, gender, and experience constitute the covariates that were controlled for.

Data Management

The data collected from the primary sources using SurveyMonkey questionnaire survey were digitally stored in secured and read-only SurveyMonkey database. The data obtained were exported to a protected excel file and imported electronically into SPSS analytic software. The Excel file was destroyed immediately after transmission of data into the software to protect users' identities. The SPSS software was installed on the researcher password protected personal computer for future processes. The accuracy and authenticity of the collected and imported data could be measure at any time between SPSS and SurveyMonkey database.

Research Questions and Hypotheses

The null hypotheses of this study asserted that there exists a no statistically significant positive correlation relationship between SOC and ER physicians' coping with stress. This assertion indicates that SOC enhances the ER physicians' coping with stress in their workplace. This research study was guided by the following research question: "Is there a relationship between SOC and ER physicians coping with stress?" The defined primary question is

subdivided into a research question that facilitated the meeting of the set objective. The following hypotheses aligned the research questions with the evaluation of the research problem:

RQ1: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of problem focused coping by the ER physicians?

H₀₁: There is no statistically significant association between comprehensibility, manageability and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

H₁₁: There is a statistically significant association between comprehensibility, manageability and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

RQ2: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the ability of ER physicians to adopt appraisal-focused coping to deal with stressors?

H₀₂: There is no statistically significant association between comprehensibility, manageability and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

H₁₂: There is a statistically significant association between comprehensibility, manageability and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

RQ3: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and ER physicians' ability to adopt emotions-focused coping to deal with stressors?

*H*₀₃: There is no statistically significant association between comprehensibility, manageability and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

*H*₁₃: There is a statistically significant association between comprehensibility, manageability and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

RQ4: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and ER physicians' ability to adopt occupation-focused coping to deal with stressors?

*H*₀₄: There is no association between comprehensibility, manageability and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

*H*₁₄: There is an association between comprehensibility, manageability and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

Threats to Validity

The largest threat to validity in this study was the lack of randomization of the sample. This could possibly impact the external validity of the study. The randomization technique eliminates bias from the study and ensures that the selected data represents the targeted population. So strictly speaking the results of the study were limited to the study sample. Also, self-reporting can introduce measurement bias which limited the validity of the study. However, the study focused on attitudes and no other method could be used to determine attitudes other

than self-reports. Finally, this is a cross sectional design so the threats due to history or maturation etc. could not be accounted for in this study which could also be threats to validity.

Summary

This study used a quantitative search design based on a field work survey. Moreover, the study used a quantitative, cross-sectional survey technique to assess the relationship between SOC and ER physicians coping with stress. The participants were selected using a simple random technique of sampling to uphold the integrity of data. This study upholds ethical considerations and used an online survey with a 100% response rate. The Excel software was used in data analysis and depicted the relationship between the variables under study. The results of the analyses were presented in the next chapter through both descriptive and inferential statistics.

Chapter 4: Study Findings

This study examined how level of SOC influenced ER physicians' coping with the various issues that affect their work. By using SOC, the study presumed that for the ER physicians to work, they have to withstand stress. The study used the SOC constructs of perceived comprehensibility, manageability, and meaningfulness in the workplace to examine coping with stressful situations among ER physicians. The outcome of this study was expected to recommend ways in which SOC could be improved so that ER physicians can cope better with stress.

This chapter presents the findings of the study based on the data collected. It covers the following topics: —the process of data collection, operationalization of variables descriptive statistics and inferential analysis of the results for each of the four research questions. The inferential analyses involve multiple linear regression. The analyses used SPSS software, Version 23.

Data Collection

The collection of data for the study adhered to the processes described in the methodology section of Chapter 3. The 140 questionnaires were distributed to the physicians in the emergency departments across the United States. All questionnaires were sent to the respondents through email after gaining consent from the participants themselves and the departments where they work. The participants acknowledged receipt of the questionnaire. All 140 questionnaires were completed and returned. The survey collected demographic information about gender, age, years in practice, and ethnicity. No other personal information was sought. The most important part of the questionnaire was the information about the SOC and the way

physicians cope with stress. Vis-à-vis the SOC and coping with stress, respondents were to select the most suitable descriptive statements, depending on how they describe their situation at work.

Both categorical and continuous scales were used, where the categorical scale measured gender and ethnicity while the continuous scale measured age and years in practice. The continuous scale was also used to measure the 23 statements of both senses of coherence and coping with stress using the Likert scale. The collected data were all entered into SPSS promptly to allow timely analysis.

Results

The results showed the demographic characteristics of the respondents in terms of age, gender, ethnicity, and the years they have been in medical practice.

Table 3

Respondents' Gender

Gender	Frequency	Percentage	Cumulative percentage
Male	90	64.30	64.30
Female	50	36.70	100.0
Total	140	100.0	100.0

From the Table 4, more male participants took part in the study than the female. About 64 % of the respondents were male, while the female was about 36.70 %. There were 90 male participants, while the females were 50. The table also shows that all the 140 participants took part in the study. The graph above shows that the number of male participants was more than the female participants.

Table 4

Respondents' Age

Age	Frequency	Percentage	Cumulative percentage
20- 30 years	25	17.20	17.20
30-45 years	40	28.60	45.80
Above 45 years	75	55.20	100.0
Total	140	100.0	100.0

From Table 5, the majority of the respondents were the people above 45 years. The people above 45 years represented about 55 %. Those with 25 years were around 17 %, while those between 30 and 45 years were 28 %. The age distribution is also shown on the pie chart, with the highest number being the physicians above 45 years.

Table 5

Ethnicity of Respondents

Races	Frequency	Percentage	Cumulative percentage
White	50	35.70	35.70
Asian	40	28.60	64.30
Black	20	14.30	78.60
Mixed race	15	10.70	89.30
Other	15	10.70	100.0
Total	140	100.0	100.0

The Table 6 above shows the ethnic distribution of the respondents. The distribution shows that the majority of the respondents were the physicians of the white origin, about 35 %. In terms of the numbers, this represents 50 of the total population. It was followed by the Asians, who were the second majority with a population of about 40 physicians representing about 28 %. The Blacks were 20 in total, with a representation of 14 %. The mixed-race and other races were 30 in total with the percentage of 22%.

Table 6

Years of Practice of Respondents

Years	Frequency	Percentage	Cumulative percentage
0-10 years	20	14.30	35.70
10- 15 years	40	28.60	64.30
15- 20 years	50	35.70	78.60
20-30 years	15	10.70	89.30
Above 30 years	15	10.70	100.0

From Table 6 above, that shows the years the respondents have been in practice. The results show that the majority of physicians indicated that they have been in practice for more than 15 years but not exceeding 20 years. The highest number is 50, with the percentage representation of 35.7% followed by those who have practiced for more than ten years, but their practice does not go beyond 15 years. Those who have been in practice for less than 10 years were 20, with the percentage representation of about 14%. The lowest numbers are those who have been in practice for more than 20 years, whose representation is 11%.

Table 7

Descriptive Statistics for Study Variables (n = 140)

	Range	Mean	Standard deviation
Sense of coherence	0-100	49.4	17.40
Manageability	0-90	52.6	9.53
Comprehensibility	0-70	47.2	13.4
Meaningfulness	0-50	45.5	19.5
Coping with Stress	0-80	37.3	9.47
Emotional-focused	0-50	42.3	18.40
Problem-focused	0-100	51.3	8.52
Occupation-focused	0-90	45.2	13.7
Appraisal-focused	0-60	43.8	15.4

Table 7 above is the descriptive statistics of how the respondents responded to the various questions about the two aspects under the investigation, the SOC and coping with stress. From the table, it is clear that most of the respondents responded to the descriptive statements under each aspect.

Table 8a

Regression Analysis between demographic variables and the composite score of SOC

	SOC	Pearson's chi-squared
Gender		
Male	81 (89.6)	.001
Female	25 (50)	
Race		
Asian	27 (66.6)	0.002
White	38 (81.4)	
Black	8 (42.3)	
Mixed race	8 (51.8)	
Others	6 (45.5)	
Age		
20-30 years	16 (66.6%)	.001
30-45 years	31 (81.4%)	
Above 45 years	70 (91.7)	
Years in practice		
0- 10 years	7 (36.7)	.521
10-15 years	20 (50.0)	
15- 20 years	27 (54.3)	
20-30 years	12 (84.4)	
Above 30 years	14 (93.5)	

Table 8b

Regression Analysis between demographic variables and the composite score of coping with stress

	Coping with stress	Pearson's chi-squared
Gender		
Male	76 (84.6)	.001
Female	24 (49.2)	
Race		
Asian	31 (64.3)	0.002
White	34 (81.4)	
Black	8 (42.3)	
Mixed race	8 (52.7)	
Others	6 (45.5)	
Age		
20-30 years	14 (58.6%)	.001
30-45 years	33 (81.4%)	
Above 45 years	62 (86.5)	
Years in practice		
0- 10 years	6 (31.7)	.521
10-15 years	21(51.4)	
15- 20 years	28 (54.3)	
20-30 years	12 (84.4)	
Above 30 years	14 (93.5)	

Tables 8 (a) and 8 (b) are regression analysis that show the association of gender, race, age, and the years in practice with the SOC and coping with stress. The results (for example, gender; male- 81 (89.6), female- 25 (50)) represents the number of participants under each demographic category that fully responded to questions related to the SOC and coping with stress. For instance, in the case of male- 81 (89.6), it means that out of the 90 males that participated in the study, 81 of them responded to questions of SOC fully. This applies to rest of the values in the table. The last column Pearson's chi-squared measure the significant category

differences among the professionals who participated in the study. For example, the Pearson's chi-squared under gender in Table 9 is 0.001 to means that for the variable sense of coherence, there was significance on how male and female participants responded to questions fully. The interpretation applies to all values under each demographic category.

All 23 statements of SOC and coping with stress were measured with continuous scale using the Likert scale for the responses. For the sense of coherence, the researcher used a 7-point bipolar Likert scale from 1 = Strongly Disagree to 7 = Strongly Agree while coping with stress involved a 5-point bipolar Likert scale 0 = Never to 4 = Often. The result in the Table 9 reveals that on gender, 120 represented 89.6% of male characters responded to the questions related to sense of coherence. The number was interpreted in terms of percentage as compared to the total number of people who participated in the study. The same applies to male where those responded to the items related to SOC were 70, representing 50% of female character targeted by the researcher.

Sense of Coherence

The questionnaire presented the respondents with 13 questions about the sense of coherence. The analysis of the results is presented in the table below:

Table 9

Number of physicians with response to the SOC Questions, N = 140

Item Description	1	2	3	4	5	6	7	Total
1. I have the feeling that I don't care about what goes on around me?	10	15	10	15	20	30	40	140
2. I have been surprised by the behavior of people whom I thought I knew well in the past?	4	6	10	25	30	30	25	140
3. It happened that people whom I counted on disappointed me	5	10	16	20	24	30	40	140

4. Until now, my life has had clear goals and purpose	10	8	20	25	26	44	30	140
5. I have the feeling that I'm being treated unfairly in the ER	5	10	15	20	25	35	35	140
6. I have the feeling that I'm in an unfamiliar situation and don't know what to do	10	15	20	20	25	30	30	140
7. Doing the things, I do every day is pleasure and satisfaction	5	15	10	10	20	30	40	140
8. I have very mixed-up feelings and ideas	10	15	20	15	25	35	40	140
9. It happens that I have feelings inside I would rather not endure	10	10	15	15	25	30	40	140
10. I have often felt like a sad loser in certain situations	6	14	20	25	30	35	45	140
11. I have generally found that I underestimated the importance of something until when it happens	10	20	20	24	26	30	40	140
12. I very often have the feeling that there's little meaning in the things I do in my daily life	15	18	24	28	32	34	40	140
13. I very often have feelings that I'm not sure I can keep under control	10	15	10	15	20	30	50	155

Note. 1-Strongly disagree, 2-Moderately disagree, 3-Disagree, 4- Undecided, 5- Agree, 6- Moderately agree, 7-Strongly agree.

Table 9 presents various items that define the SOC as it applies in the healthcare sector for physicians who work in the emergency rooms. The presented items in Table 10 indicate how the physicians can familiarize themselves with the stressful situations in the emergency rooms and adjust to cope up with the situations. The respondents showed their level of agreement and disagreement and the Table 9 above shows the number of responses from the survey. The SOC helps the physicians to learn about the conditions of their places of work regarding the various things that affect their operations in the emergency rooms. Physicians use the three elements including manageability, comprehensibility, and meaningfulness to identify these conditions thus helping them to make relevant adjustments.

In Table 9 above shows the number of responses indicated by the participants on the level of agreement or disagreement about the items describing the SOC among the physicians working in the emergency areas in healthcare. The totals under each item show the total number of responses of how the respondents agree with the statements that describe the way they were able to cope up with the stress that is related to their workplaces. The respondents were required to indicate their level of agreement or disagreement. The items indicated are differentiated based on the perception of the participants about their comprehensibility, manageability, and meaningfulness. The items that reflect on the comprehensibility include: (2) I have been surprised by the behavior of people whom I thought I knew well in the past?, (6) I have the feeling that I'm in an unfamiliar situation and don't know what to do, (8) I have very mixed-up feelings and ideas, (9) It happens that I have feelings inside I would rather not endure, and (11) I have generally found that I underestimated the importance of something until when it happens. The items that reflect on the manageability include: (3) It happened that people whom I counted on disappointed me, (5) I have the feeling that I'm being treated unfairly in the ER, (10) I have often felt like a sad loser in certain situations, (13) I very often have feelings that I'm not sure I can keep under control. Finally, the items that reflect on the meaningfulness include: (1) I have the feeling that I really don't care about what goes on around me?, (4) Until now, my life has had clear goals and purpose, (7) Doing the things I do every day is pleasure and satisfaction, and (12) I very often feel that there's little meaning in the things I do in my daily life.

On the aspect of manageability, the highest number of responses of 58 with the largest percentage representation in the table agrees that they have once been disappointed by the people whom they counted on most in their lives. Only the smallest number of responses in the table about 14 did not agree with the statement. The highest number of respondents of 100 agrees and

strongly agrees that they have undergone unfair treatment while in the emergency rooms. The numbers are represented by 100, which are represented by about 70%. Only a small number of doctors equal to 10 doctors could not agree that they have been subjected to unfair treatment in the emergency room. Physicians were asked to respond to the way they feel about their situations when they sometimes lose. The number of responses indicates that the majority have a feeling that they are often bad losers in any situation. It happened that at least 50 respondents as shown in the table agree that they lose badly when some situations occur for them. From the feedback in Table 10 above, it is true that most of respondents, 48 representing about 33%, are not sure whether they can keep under control. Only the smallest numbers of about 15 people representing 12% are sure that they can keep control.

On comprehensibility, respondents' view the people whom they knew in the past and whether the way these people behave as expected of them. The outcome as shown in the table support that the highest number of responses agrees that they have at one time been surprised by the characters of the people they knew in the past. The number of responses is 52 of those that were under the investigation. Only the smallest number of responses did not agree with the fact that they are surprised by the behaviors of the people they knew. On whether they always feel they are not in the familiar and that they lack what to do, their responses, most of the respondents disagreed with this notion, with only 20 responses, representing 13 % agreeing that they find their working environment unfamiliar and that they have nothing they can do. Then the highest number of the respondents, 42 representing about 30 %, disagreed with this notion. The highest number of physicians agrees with the fact that they have been disappointed at one time by the people whom they have counted on. The highest number is represented by 45 doctors (32 %), who agreed that they have been disappointed. Only a small number of 15 doctors represented by

13.4% could not agree. The respondents presented their views on whether they would endure any inside feeling. The results, however, show that many agree that their feelings tell them that they may not endure if they are faced with challenge situations. From the table, 38 doctors and 44 doctors representing 32 doctors and 30 % agreed with this notion that they find it difficult to endure such situations. The majority, 57 doctors who were investigated agreed that they at one time assumed or underestimated how essential things were until when something happens. The nation seems to be undertaken by many doctors since 43 % agreed with this statement, with only less than 10 % disagreeing that they underestimate the importance of things.

Finally, on meaningfulness, the concern of the physicians about what goes on around them. The majority of the respondents agree they have little information on what goes on around them and do not care about the same. The highest number, 53 doctors, representing about 41 %, were in agreement that indeed they do not care about what goes on around them. Only the smallest numbers of 13 doctors, representing about 12 % do not agree that they do not care about what goes on around them. On whether they have clear goals and purpose, most, 57 doctors agree that their lives had clear goals and purposes as at the time they were responding to the study. The lowest number of about 13 people indicated to disagree with the statements representing about 10 % of the population under the study. Also, the majority of the physicians, 58 doctors, which is about 46 %, find the pleasure and satisfaction in what they do. The similarly high number is indicated by the many participants, 34 doctors who strongly agree with the statement. Only the smallest number of about 8 doctors did not agree with this statement that they feel please and satisfaction in what they do. About the ways the physicians think about things in their lives, most of the physicians have developed the fear that the things they do have very little meaning in their daily life. The significant number of more than 80 doctors

representing about 56 % who took part in the survey indicated that most of the things they do in lives do not add up to their value of daily life.

Table 10

Number of physicians with response to the Coping with Stress Questions, $N = 140$

Item description	0	1	2	3	4	Total
In the last month, how often have you been upset because of something that happened unexpectedly	14	16	40	40	30	140
In the last month, how often have you felt that you were unable to control the important things in your life?	15	25	30	45	35	140
In the last month, how often have you felt nervous and “stressed”?	20	15	25	34	36	140
In the last month, how often have you felt confident about your ability to handle your problems?	12	27	23	55	35	140
In the last month, how often have you felt that things were going your way?	15	28	24	28	55	140
In the last month, how often have you found that you could not cope with all the things that you had to do?	10	15	30	45	35	140
In the last month, how often have you been able to control irritations in your life?	14	26	20	35	45	140
In the last month, how often have you felt that you were on top of things?	12	24	46	28	25	140
In the last month, how often have you been angered because of things that were outside of your control?	24	23	27	30	36	140
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	27	20	33	35	45	140

Note. 0-Never, 1-Sometimes, 2- Occasionally, 3-Seldom, 4-Often.

The total column has been included in the table to show the total number of respondents that took part in the survey. The respondents provided feedback for the items in the table to help the research analyze the data.

The Table 10 above presents items that describe how physicians working in emergency rooms can cope with the stressful stresses. Stress has been identified as one of the issues that

many doctors in places of work face. In the table, the descriptive statements are in reference to the previous one month that the physicians had gone through. These statements define the ways physicians attempted to get over the stress they experienced over the period. The table above shows the total number of responses to the items that describe the coping with stress among the physicians. The totals under each item show how the respondents agree with the statements that describe the way they were able to cope with the stress that is related to their workplaces. The respondents indicated their levels of agreement. From the results, most of the respondents indeed agree with the statements which indicate how they were able to cope up with the stressful situations.

From the table, the results show that the majority of the physicians often find it hard to control some things in their lives. 60 doctors representing 46 % indicated that they often find themselves unable to control some things in their lives more often. The lowest number of physicians, about 10 doctors, indicated that they never find challenges to control things in their lives. The majority of the physicians indicated that they very often find themselves stressed and nervous about the past month. The numbers of respondents who often have this feeling are 55 doctors, which is about 42% of the population. It is only the lowest number of physicians at 14 doctors, who indicated that they never felt nervous or stressed over the past month. The highest number of physicians indicated that they very often feel that they have the confidence to handle their problems. The number of these people was about 70 doctors representing 50% of the population under the study. The same large number was followed by 27 doctors who indicated that they often have confidence that they can handle their problems.

Sense of Coherence

To answer the research questions, the researcher used the descriptive items presented about the SOC and coping with stress. The statements on the SOC show how the physicians perceive the ER environment while those on the coping with stress show the response by the physicians to work within the rooms.

General Research Questions

Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of stress coping by the ER physicians?

H_{01} : There is no statistically significant association between comprehensibility, manageability, and meaningfulness with stress coping among ER physicians while controlling for demographic covariates.

H_{11} . There is a statistically significant association between comprehensibility, manageability, and meaningfulness with stress coping among ER physicians while controlling for demographic covariates.

To answer this question, the researcher had to use the data presented by the respondents about the SOC about the stress coping and present in the table as below.

Table 11

Relationship between total SOC (SOC) and Coping with Stress in ER for Physicians

	Adjusted R ²	Beta	P
Comprehensibility	.180	.426	.001
Manageability	.093	.532	.001
Meaningfulness	.254	.354	.002

Note:

Comprehensibility results are corresponded to questions 2, 6, 8, 9, 11 of Table 10

Manageability results are corresponded to questions 3, 5, 10, 13 of Table 10

Meaningfulness results are corresponded to questions 1, 4, 7, 12 of Table 10

Table 11 does not relate to the specific aspect of coping with stress. Instead, this table shows the results for the composite score of coping with stress. The table establishes the total relationship between the senses of coherence and coping with stress. Therefore, the question being answered is:

Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of stress coping by the ER physicians?

It presents cumulative analysis that compares the responses of the physicians in the questions about the SOC and coping with stress. This table considers the three elements of SOC in relation to coping with stress in general to show how SOC influenced coping with stress cumulatively. Each of the variables is corresponding to coping with stress in the ER showing different significant value. The stepwise multiple linear regression analysis was conducted to assess the ability of the SOC (comprehensibility, manageability, and meaningfulness) to predict the how physician cope up stress in emergency rooms. In this case, the dependent variable is coping with stress while independent variable involves the components of sense of coherence. The Table 11 above shows the level at which the SOC associated with the stress coping strategies. In the table, r is adjusted for all the three elements of SOC to show the significance with which it is related with coping with stress. The relationship that is shown between the independent and dependent variables is significant with the least being meaningfulness. In the situation where respondents tend to figure out the meaning of the situation, the significant value associated with stress coping is 0.002, which is less compared with comprehensibility and manageability.

RQ1: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the adoption of problem-focused coping by the ER physicians?

H_01 : There is no statistically significant association between comprehensibility, manageability, and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

H_11 : There is a statistically significant association between comprehensibility, manageability, and meaningfulness with problem-focused coping among ER physicians while controlling for demographic covariates.

To answer this question, the research had to use the data presented by the respondents about the SOC about the problem-focused coping.

Table 12

Regression Analysis of Problem-focused Coping by ER Physicians

Sense of coherence	Adjusted R ²	Beta	P
Comprehensibility	.195	.453	.003
Manageability	.107	.557	.013
Meaningfulness	.271	.374	.216

This involved the multiple linear regression analysis was conducted to assess the ability of the SOC to measure the problem-focused stress coping among physicians. The regression involves the three components of SOC which include comprehensibility, manageability, and meaningfulness. The dependent variable is problem-focused coping while independent variable involves the components of sense of coherence. The independent variable is defined in terms of how impactful it is to the working environment for physicians in the emergency rooms. Stress in

this model in Table 12 is seen as that which depends on this environment and the component that more impactful to the physicians is statistically significant. The Table 13 above shows an adjusted association between the elements of the senses of coherence and the problem-focused coping among physicians in the emergency rooms. The statistically significant correlation is indicated for all the elements identified. The statistically significant value is shown for comprehensibility with the p-value of 0.003. The fact that the result of the regression analysis shows the significant correlation means that the null hypothesis that there is no association between comprehensibility, manageability, and meaningfulness with problem-focused coping among ER physicians is hereby rejected.

RQ2: Is there a relationship between SOC (manageability, comprehensibility, and meaningfulness) and the ability of ER physicians to adopt appraisal-focused coping to deal with stressors?

H₀₂: There is no statistically significant association between comprehensibility, manageability, and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

H₁₂: There is a statistically significant association between comprehensibility, manageability, and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

To answer this question, the researcher carried out a regression analysis to establish the relationship between the relevant variables, as shown in the table below:

Table 13

Regression Analysis of Appraisal-focused Coping by ER Physicians

Sense of coherence	Adjusted R ²	Beta	P
Comprehensibility	.223	.633	.033
Manageability	.146	.694	.046
Meaningfulness	.398	.524	.407

Multiple linear regression analysis was used to measure how the SOC (comprehensibility, manageability, and meaningfulness) measures the appraisal-focused stress coping among physicians. The dependent variable is appraisal -focused stress coping while independent variable involves the components of sense of coherence. In above Table 13, it is evident that the values showing the level of relationship between the elements of the SOC are not statistically significant. For comprehensibility, p is 0.033, while the lowest is for meaningfulness, which p is 0.407. The r adjustment continues to strengthen hence the strong association between the SOC and the appraisal focused coping. The result rejects the hypothesis that there is association between comprehensibility, manageability, and meaningfulness with appraisal-focused coping among ER physicians while controlling for demographic covariates.

RQ3: Is there a relationship between SOC (meaningfulness, comprehensibility, and manageability) and ER physicians' ability to adopt emotions-focused coping to deal with stressors?

*H*₀₃: There is no statistically significant association between comprehensibility, manageability, and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

*H*₁₃: There is a statistically significant association between comprehensibility, manageability, and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

To answer this question, the researcher carried out a regression analysis to establish the correlation between the relevant variables, as shown in the figure below:

Table 14

Regression Analysis of emotions-focused Coping by ER Physicians

Sense of coherence	Adjusted R2	Beta	P
Comprehensibility	.223	.633	.014
Manageability	.146	.694	.019
Meaningfulness	.398	.524	.317

Multiple linear regression analysis was used to measure how the SOC (comprehensibility, manageability, and meaningfulness) predicts the emotions-focused stress coping among physicians. The dependent variable is emotions -focused coping while independent variable involves the components of sense of coherence. In the similar case, the independent variable is defined by the extent to which the three components of the SOC affect the working environment in the emergency room. The Table 14 shows the adjusted level of the various elements of the SOC to show how they correlate with the emotion-focused stress-coping strategies. The highest significant value is shown on the comprehensibility. However, the p-value is not statistically significant for all other elements of the sense of coherence, supporting the strong relationship between the SOC and the appraisal-focused coping. The result this rejects the hypothesis which suggests that there is statistically significant association between comprehensibility,

manageability, and meaningfulness with emotions-focused coping among ER physicians while controlling for demographic covariates.

RQ4: Is there a relationship between SOC (meaningfulness, comprehensibility, and manageability) and ER physicians' ability to adopt occupation-focused coping to deal with stressors?

H_{04} : There is no statistically significant association between comprehensibility, manageability, and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

H_{14} : There is a statistically significant association between comprehensibility, manageability, and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates.

To answer this question, the researcher used the collected data to do a regression analysis of the relevant variables with the results as follows:

Table 15

Relationship between SOC (SOC) and Occupation-focused Coping by ER Physicians

Sense of coherence	Adjusted R2	Beta	P
Comprehensibility	.223	.633	.004
Manageability	.146	.694	.019
Meaningfulness	.398	.524	.317

Multiple linear regression analysis was used to assess how the SOC measures the level of occupation-focused stress coping. The regression involves the three components of SOC which include comprehensibility, manageability, and meaningfulness to measure the occupational-focused stress coping among physicians. The dependent variable is occupation-focused coping while independent variable involves the components of sense of coherence. The independent

variable is defined in terms of how impactful it is to the working environment for physicians in the emergency rooms. Similarly, from the Table 15, it is evident that the p-values for the elements of SOC are significant enough. The p-value for comprehensibility is the statistically significant to show a strong relationship. However, considering the fact that association is strong shows an existing relationship between the variables. Therefore, this rejects the null hypothesis that there is no statistically significant association between comprehensibility and occupation-focused coping. The null hypothesis is accepted for manageability and meaningfulness with occupation-focused coping among ER physicians while controlling for demographic covariates is rejected.

Summary

In chapter 4, the findings of the study from the data collected were presented. The chapter was segmented into various sections starting with the process of data collection and the operationalization of variables that were used in the study, followed with information about the descriptive statistics and the inferential analysis of the results for each of the four research questions. The inferential analyses involved multiple linear regression. The analyses used SPSS software, Version 23. The chapter concludes with the summary and transition to the next chapter. For data collection, the questionnaires were used and distributed to the participants. The 140 questionnaires were distributed to the physicians in the emergency department in the health institutions in the United States. The survey intended to collect the general information about the respondents in terms of their demographics, including gender, age, years they have been in practice, and their ethnicity.

Table 3 represented the gender of the participants which showed that there were more males than the females who took part in the study. In Table 4, the ages of the participants were

presented to show that most of them were above 45 years. For the ethnicity of the participants in Table 5, the highest number is for the white followed by the Asians. The highest number of them had worked for over ten years and had enough experience to take part in the study. The results of this study in general supported the notion that there is a scientifically significant total relationship between the SOC and coping with stress. The respondents who aligned with the SOC could easily cope with stress unlike those who could not.

Be sure to eliminate any blank pages in the final draft.

Chapter 5: Interpretation of the Results

The purpose of the study was to examine how the level of SOC influences ER physician scoping with the issues that affect their work. By incorporating SOC, the study assumed that for the emergency room physicians to work well, they have to withstand related stress. The study used perceived comprehensibility, manageability, and meaningfulness in the workplace in order to manage stressful life situations in the organization. The outcome of this study was expected to suggest ways in which SOC could be improved so that ER physicians could cope better with stress.

This chapter examines the findings in more detail on the way physicians cope with stressful situations in the ER. According to the results, the attributes of a SOC—which include comprehensibility, manageability, and meaningfulness—help physicians cope with stress while in the ER. The majority of physicians who took part in the study supported the statements that define the SOC as experienced by the workers in the ER. Similarly, according to the respondents, physicians experience stress as they work in the ER. This chapter looks into detailed aspects that encompass the sense of coherence: comprehensibility, manageability, and meaningfulness. An understanding of these aspects is important in illustrating how they facilitate ER physicians developing problem-focused, appraisal-focused, emotion-focused, and occupation-focused coping strategies for containing these stressful situations.

Interpretation of the Findings

The findings confirmed that SOC among ER physicians influences their ability to cope with work stress. Descriptive analysis revealed that a higher number of men than women took part in the study and that most had than 20 years of experience. The higher proportion of male participants explained the ability that the physicians have to develop SOC to face the stressful

work situation. Even with this conclusion, the impact of gender differences on the SOC defines the ability to manage stressful situations. However, based on the research, the SOC explains the ability that ER physicians develop that allow them to endure any environment that is perceived as dynamic and to be able to perceive what is going on around them around them? It all starts with an attitude or the way a person perceives a stressful situation and develops a means of adjusting.

Male workers are perceived to have high chances of withstanding difficulties within their job environment. A study by Bergman, Ahmad, and Stewart (2003) on the issue of gender and how it affects stress among physicians revealed that most male physicians gained more ability to withstand stress compared to female physicians. An earlier, similar study by Shepperd and Kashani (1991) was carried out on the health of adolescents and the way they cope with stress revealed that male adolescents could easily manage their stress and develop coping strategies compared to their female counterparts. The fact that the findings show the high number of male physicians working in the emergency rooms explains the outcome of the study, which supports the hypothesis that the SOC influences how they cope with the stressful situations. The many male physicians who indicated that the SOC supporting how it facilitates the coping up with the stress while working in the emergency rooms make it possible to base on the literature to conclude. One of the essential aspects emerging from the ability of the physicians to cope with stress is the manageability thing where the males are believed to manage events leading to stress with easy. This reveals the association the SOC (manageability) has with the stress-coping process since they work in support of each other.

Similarly, it is unclear how the age and the years of practice among the physicians influence the ability of the physicians to manage stressful situations. However, the descriptive

data in Table 4 shows that the age of the respondents with the majority of the being above the age of 45 years. From the literature, studies have indicated a strong association between the age of the physicians and their ability to cope with stress. The study by Visser, Smets, Oort, and De Haes (2003) indicates that young-adult workers experience a high level of stress as they attempt to deal with many life aspects, including their youthful life. Unlike, young adults, the aged people working as physicians have encountered many challenges and have learned ways to handle them. Thus, the responses were made by the physicians who took part in the study most who are above 45 years; agree with the statements indicating the sense of coherence. This illustrates that the majority of the physicians who have many years can withstand stressful situations since they can relate the events of stress and develop the SOC to help cope with the situations. The literature on burnout and stress among physicians has revealed the role professionalism plays in influencing the SOC to aid workers cope with stressful situations. The study by Rabinowitz, Kushnir, and Ribak (2006) examined in depth how professionalism and years of practice enable the physicians to deal with stress when faced in their work. The studies Rabinowitz, Kushnir, and Ribak (2006), among others, support the outcome of the current study. The indicated years of practice of the participants were considered with the large proportion of those investigated, showing that they have worked for less than 20 years. Only a small number of medical doctors in this study reported having worked for more than 30 years. The lowest years of practice among physicians show that the majority are vulnerable to the stress that comes with the work they do. The fact that a large proportion of the physicians working in the emergency rooms are prone to stressful experiences means the majority would develop the attitude to manage the situation to avoid the instances where the safety of the patients is endangered. The situation explains the reason most of them agreed with the stress-related statements and the need for them

to develop the SOC if they have to withstand the type of stress they experience. From the literature review, one aspect of the SOC is comprehensibility, which defines how one understands the events that allow the creation of logical sense based on the consistency. This means that physicians who have stayed long working in emergency situations have basic information on the events that cause stress and likely create the logical sense based on their knowledge to withstand stressful situations.

Despite the unclear effects by the age, years of practice, and the gender, Table 9 in the findings section shows a significant association between these variables and the SOC and coping with stress. Factors explaining the relationship amongst these variables have been expressed by earlier researchers, including Bergman, Ahmad, and Stewart (2003) and Rabinowitz, Kushnir, and Ribak (2006). The mentioned researchers are among the few who have carried their studies within the hospital environment to measure how gender, age, and the years of practice affect the working of the physicians and other workers, especially in specialized sections. The levels of association between ages, years of practice, and gender with the SOC and coping with stress is significant enough. The values include 0.001, 0.002, and 0.001 for gender, ages, and years of practice, respectively. The strong relationships are attributed to the factors that have been identified in the literature that male physicians can withstand stress-related events and are likely to develop the ability to manage stressful situations. The aspects of the sense of coherence, which include manageability, comprehensibility, and meaningfulness have been identified to play a key role in facilitating the physicians in various categories to cope with the events leading to stress. Thus, the value of significance shown in Table 10 confirms an earlier strong association that has been identified between the SOC and coping with stress.

Exhaustion, inefficacy, and cynicism are some of the challenges faced by the physicians in the emergency rooms, as identified in the literature. The high numbers of the patients who need emergency services compared to the lower number of physicians who operate in the emergency rooms are some of the factors that would lead to the distress experience among the physicians. Table 9 of the findings sections confirm the high rate of physicians working in emergency rooms who agreed with the idea that they face difficult situations while working in the rooms. The responses of the physicians were in line with the SOC and the ability to coping with stress. The standard deviation for the SOC was 17.40 while the value for coping with stress was 9.47. The lowest values associated with these variables support the prior studies which associated the hardships in the emergency rooms with stressful situations. Due to many factors that would challenge the physicians, many responded to having developed any of the three aspects associated with the sense of coherence, such as manageability, comprehensibility, and the meaningfulness. Initially, the studies have identified these aspects as the most crucial for any individual faced with challenging situations and want to get out. By showing a relatively low standard deviation indicates that majority of the physicians agree that they develop the SOC while working in the emergency rooms. Thus, the SOC has been critical in facilitating them to cope with the stress they experience. The literature as well identified the various forms of stress that physicians face ranging from problem-related, emotional, physical, occupational, and appraisal. The fact that physicians in the emergency rooms are at the risk of developing these stresses explains the lower rate of standard deviation of 9.47. The results support the idea that physicians would develop coping strategies for all stress-related forms, such as problem-focused, emotion-focused, and occupation-focused coping measures.

Due to the pressure, the health sector continues to experience as more patients seek medical care with limited resources in terms of finance and labor, the SOC remains a significant aspect to consider. Table 9 in the findings section illustrates various items that describe the SOC and how the physicians under the study responded to the statements. The large proportion of the physicians supported these items to illustrate the essentiality that the SOC has for those working in much-involving areas such as the emergency rooms. Literature tells that individuals were working in areas that are stressful or highly involving need to have then the SOC for their health and wellbeing. The fact that emergency rooms are stressful and highly involving explains the reason many of the physicians indicated to agree that items were describing the sense of coherence. The responses in Table 10 show that for physicians to cope up with the situations in the emergency rooms where they carry out their operations, they need to develop measures through which they would be able to handle their situations. As illustrated in the table, all the mentioned items were classified into the various elements that had been identified by researchers to find the simplicity with which the people can manage their stressful situations. The items in the table have been identified as comprehensibility, manageability, and meaningfulness, according to Vogt, Jenny, and Bauer (2013). Each of these elements is associated with related items regarding the extent to which these items describe the sense of coherence. From the table, the items that reflect on the comprehensibility include: 2) I have been surprised by the behavior of people whom I thought I knew well in the past?, 6) I have the feeling that I'm in an unfamiliar situation and don't know what to do, 8) I have very mixed-up feelings and ideas, 9) It happens that I have feelings inside I would rather not endure, and 11) I have generally found that I underestimated the importance of something until when it happens. In the literature review, comprehensibility has been defined as the extent of understanding events leading to the

prevailing situation. For the case of study, comprehensibility is when physicians can understand the events that may lead to stressful situations when working in emergency rooms. Thus, where the causes of the situation are internal or external, comprehensibility allows physicians to understand when the issue is about to occur and develop measures that would allow one to overcome the challenges. When one examines the identified items that associate with comprehensiveness, most statements in the table indeed illustrate the feeling of understanding the things and people around the places of work. A huge number of those who were surveyed tend to agree on most of the items describing the SOC (Comprehensibility). This shows that for the physicians to work well in the emergency rooms, they need to have the understanding of all the situations around the place. The understanding, however, should be clear, coherent, and well-structured to make it easy to develop resistance measures.

The items related to manageability have been used to illustrate the use of the SOC among the physicians. The same table shows that physicians who took part in the research responded to four items that reflect on the manageability element that facilitates the people working in stressful situations to cope up with the environment. All the identified elements reflect on how physicians are affected in the emergency rooms and the relevant measures they can develop hence the high proportion of the respondents supporting this course. These items that show the manageability include: 3) It happened that people whom I counted on disappointed me, 5) I have the feeling that I'm being treated unfairly in the ER, 10) I have often felt like a sad loser in certain situations, 13) I very often have feelings that I'm not sure I can keep under control. The items identified define how the physicians who face challenges can try means to improve on the easiness, competency, and the speed with which they handle the stressful situations. From the study which was conducted by Goldberg et al. (1996), manageability makes a critical part of the

system which functions properly. Therefore, through the manageability aspect, the physicians can discover, configure, and control the events leading to stressful situations. The fact that a large proportion of the physicians who responded to the survey indicated that they agree with these items that reflect on the manageability means that they find the attempt to manage the situations around an effective way through which they can cope with the stressful situations.

The same Table 9 shows the results for the statements that reflect on the meaningfulness as an element which physicians who work in emergency rooms would develop to help them make through their stressful situations. Some of the statements which the participants responded to in regard to meaningfulness include: 1) I have the feeling that I really don't care about what goes on around me?, 4) Until now, my life has had clear goals and purpose, 7) Doing the things I do every day is pleasure and satisfaction, and 12) I very often feel that there's little meaning in the things I do in my daily life. From the mentioned statements, it evident that most of them illustrate that the physicians who find themselves pressured by the activities of the workplaces tend to makes some meaning out of these situations for them to develop relevant measures that allow them to confront the stressful situations that they face. Romas and Sharma (2017), in their study, supported the idea of creating emotional meaning for any situation. Thus, by supporting these statements, the physicians wanted to illustrate their composure when subjected to stressful situations to cope with such situations.

The SOC plays a critical role in ensuring that medical doctors working in extreme areas like emergency rooms can perform their duties with limited challenges. The key role of the SOC was illustrated in Table 10 which investigated the feelings which physicians in emergency have concerning the way they view their working environment (Antonovsky, 1987). From Table 10, the large proportion of the respondents indicated to agree with the statements that reflect on the

three elements of sense of coherence. For instance, Table 12 illustrates the responses from the physicians on the disappointment of the people they encounter while on duty. The high proportionate of the participants agree with the statement considering the fact that emergency rooms are highly involving places. The majority of the workers tend to focus on their duties and how to make their high earnings, and no one would want to be concerned with the other. Literature has also identified issues such as limited human resources working to give services to the huge number of patients in the room. The circumstances around the room and within the facilities are unfriendly to the medical doctors working there hence the disappointments. The aspects of manageability, comprehensibility, and meaningfulness are illustrated in Table 10 The majority of the medical officers who supported these statements had an idea of the happenings within the emergency rooms that allows them to develop the attitude that facilitates them to cope with the stress or hard situations.

The study intended to measure the extent to which the physicians working in the emergency rooms could manage their stress. This prompted the researchers to investigate the participants on their response towards the various items/statements which describe the way physicians could cope with stress in the emergency rooms. Table 11 shows that the large proportion of the physicians who were interrogated supported these statements. The huge support from the respondents means that many agree that in many cases, they often experience challenges that lead them to feel stressed while working in the emergency rooms. By physicians indicating that they often experience instances that illustrate stress conditions mean that emergency rooms are prone to many activities that would amount to stress. The literature review identifies that many circumstances cause stress among the physicians, especially those working in areas perceived to be highly involving such as in the emergency rooms. Among the identified

factors include the huge number of patients who seek the services from the emergency sections compared to the few medical doctors who attend to them. Often, these medical personnel in the emergency are subjected to limited resources and equipment to work with besides the few workers. Thus, their safety is at risk as well as the safety of the patients, not mentioning the fatigue and the psychological and emotional issues they face while attending to the patients. As they face all these hardships, these medical doctors have the obligation of ensuring that patients are served well and that they take care of their safety and wellbeing. As a result, the physicians are forced to adopt the measures that will facilitate their smooth working in these critical areas. The intention to make adjustments illustrates the intent by the specialists to develop the SOC that would help them resist these challenges that they face. The factors mentioned in the literature review show that personnel working in the emergency areas are likely to experience challenges hence the high proportion of physicians showing that they often face events that suggest the occurrence of stress. In the process, they develop ways or strategies that help them through the hardships. It is coincident that the majority of those who were investigated agreed with all the statements that were presented for the study. This again confirms the hypothesis that links SOC to stress coping.

The responses from the physicians who took part in the study are further indicated in Table 11. In this table, the high proportion of the medical doctors indicated that very often experience stress-related events when on duty in the emergency rooms. The events allow them to adjust in a way that they can manage the situations allowing them cope with the challenges that often cause stress (Antonovsky, 1987). For instance, in this Table 11 under item 2 many respondents indicated they very often experience their inability to handle some things in their lives. However, as they indicated this, they were able to adopt the stress-coping measures

facilitating their process of coping and working well in their workplaces. It is always true that whenever faced with challenges, workers in any given environment like in the case of the emergency rooms will develop means through which they can address the issues arise. Thus, the more often they face challenges them more they develop the coping techniques. This explains the reason high proportion of responses in Table 11 under item 8 agreed that they have often made attempts to become on the top of the things that seem to cause stressful situations.

The regression analysis was critical in allowing the researcher to establish the relationship which exists between the SOC (SOC) and coping with stress in emergency rooms for Physicians. Table 10 shows the adjusted elements of the SOC with the p- values that indicate the correlation between these variables is significant. The strong relationship shown in Table 12 by the SOC and the coping with stress is supported by the literature with the acknowledgment from researchers such as Sharma (2017). Sharma confirms that it is expected for the physicians to have a high level of SOC if they have to do well in their setting without stress. Physicians are likely to face stress considering the huge number of patients whom they serve with different problems especially those who require emergency services. The strong association indicated in the table reveals the important role the SOC plays, thus its need for the physicians if they have to overcome stress (Sharma, 2017).. Regarding manageability, those who experience stress will adopt means through which they can handle the situation hence the significant relation with coping styles. The same applies to comprehensibility and meaningfulness which all exist in situations believed harmful facilitating the continued with minimal or no harm. The same is supported by Antonovsky (1996) who observed that those having stronger SOC tend to be healthier especially those who experience emotional stress.

A further examination of the association reveals that the SOC is significantly related to various forms of stress coping styles. They include problem-focused, emotions-focused, appraisal-focused, and occupations-focused. The p-values all indicate that the three elements of the SOC all have the correlation with the forms of stress coping, which focus on multiple aspects such as occupation, emotion, and problem that physicians face while attending to their duties. The strong correlation occurs between the SOC (comprehensibility) with problem-focused coping considering the many problems the medical doctors face while attending on duties. The problems include inadequate resources; human, and equipment, many injuries, and exposure to unfriendly working environment. Due to the many challenges, physicians tend to develop coping measures that are related to the problems they face at work (Sharma, 2017). The fact that problems occur more often in emergency rooms reflects on the strong relationship. However, from the results, the association is not statistically significant for meaningfulness and the manageability components. The same case occurs with the emotions-focused coping where the physicians may be consumed by the emotions that occur in the emergency rooms. This requires the SOC which reflects on manageability. Occupation and appraisal are more of related to the places where the physicians work. They are required to create familiarity for them to understand the challenges and the best coping style that would allow the medical doctors to offer their services well.

Limitations of the Study

Though the researcher was successful in reaching the findings of the study, there were multiple limitations that were experienced, as projected in chapter one. Most of the limitations experienced were related to the use of self-reports in the gathering of the data that was used for analysis. in the self-reporting, the physicians tend to report about themselves, something that is

likely to be biased in their responses and may exaggerate information. For instance, some respondents wanted to create a great impression of themselves by presenting the ideal coping and SOC profile. However, the limitation can be reduced by encouraging confidential and anonymous responses to the questions. Another challenge that was associated with the self-reports was that some participants did not want to respond at all as a result of reluctance to fill the questionnaires or participating in interviews. The same is supported by the fact that responses in the survey were not under any obligation to respond to the questionnaire. Any responses were just at the liberty of the physicians. However, the issue of non-response was minimized by following up with the respondents closely through reminder emails, phone calls, and rescheduling of missed interviews. The research also faced usual hurdles such as limited resources and time considering the huge number of those involved and the limited time that was available.

Recommendations

Various recommendations could do well following the successful study that had revealed various issues that occur in the emergency rooms and how the SOC and coping with stress could be achieved. Among the recommendations include:

- All the healthcare organizations, especially those operating in busy places with huge populations should put measures in place to avail enough resources for use. These resources range from human resources, financial, and material needed.
- Due to the huge amount of work that physicians face while in the emergency rooms, no single medical doctor or any other person is supposed to work for more than the stipulated amount for time for such work according to labor laws.

- Significant compensations and benefits are a form of motivation for physicians who work in emergency rooms. They need to be motivated to neutralize the stress that they encounter while working in these rooms.
- Physicians in the emergency rooms need enough rest if they have to work well with minimal or no errors performed.

Implications for Social Change The study was critical for users who include the learners and scholars in various fields who have not had enough time to gather data. For instance, the psychologists who study the mental ability of the people found it easy to understand more about stress, causes, and ways to overcome stress. Health providers are among the significant group that would be impacted by this study in the sense that they experience challenges that need to combat. Thus, the findings will help providers have a better understanding of the constructs associated with stress among ER physicians. In any case, health care providers are able to manage through stressful situations in their places of work if they understand the environment and the involved constructs.

Many hospitals would require empirical data to allow them to arrange for their workers especially those working in critical areas. The information is impactful such as the institutions will find it easy to access the information and use its analysis on the further course of action. It is true that healthcare organizations operate in the communities where they offer healthcare services to the people in any community. Besides services to the patients and customers, the management of these organizations have the obligation to ensure that the workers, most who are medical practitioners including the nurses, medical doctors, and clinical officers operate in favorable conditions. The ability for physicians to offer best services to the community depends on the conditions under which they work in hospital settings. Thus, besides the professional

responsibility, the management has to extend the services to ensure that workers are well-taken care off including their welfare.

Any organization such a hospital has the social responsibility towards not only the members of the community but the workers who include medical doctors. The report is therefore impactful to the administration of the healthcare facilities to ensure that welfare of the physicians is taken good care to help the cope up with the high level of stress in the emergency room. By observing the social responsibilities, organizations need to improve both the economic and social lives of the physicians. This can be achieved through allowing workers to have time with the families, providing environment that facilitate free interactions during their work, offering the workers especially those in ER additional pay and free accommodation. The intention to improve the social life of these physicians is to help them reduce the many sources of stress besides the work-related stress.

The findings of this study have both the clinical and public health implications considering that the two sectors aim at achieving the high quality for patients. In any clinical settings, the performance of the physicians and other health providers depends on the facilities. The clinical health setting that does not support the emergency rooms with the required equipment for physicians to use and protect themselves during surgeries exposes them to stress. Drawing from the findings of the study, clinical and public health will create a setting that facilitates the ER physicians with the right tools for use in carrying out surgeries. Physicians need to protect themselves from any potential dangers they are exposed to as they carry out operations. Thus, the study is important in ensuring that working conditions for the physicians are better to increase their morale and productivity in the healthcare sector. It also means that the services offered to patients will be quality since physicians are comfortable during their work.

Conclusion

Therefore, from the results of the study, it is true that the levels of the SOC influence the coping with stress among the physicians especially those that work in the emergency rooms. Many researchers in the field of psychology and other related areas have examined the aspect of sense of coherence. SOC occurs in humans when faced with situations perceived difficult. Through the sense of coherence, physicians make adjustments in order to cope with the prevailing situation. In this study, three elements of SOC have been identified which include manageability, comprehensibility, and meaningfulness. These aspects engulf the physicians who feel some stress while at work to help them to cope with some situations. The study as well identifies the four forms of stress ranging from problem-based, occupation based, emotions-based, and appraisal-based stresses. Whenever these situations occur in physicians, they are subjected to some pressure which requires that they develop SOC if they have to cope with the situation. It is important that healthcare organizations consider measures that would reduce the challenges that physicians face to improve their performances at work.

References

- Aala, A., Tabrizi, J., Ranjbar, F., Vahdati, S. S., & Mohammadi, N. (2014). Frequency of burnout, sleepiness, and depression in emergency medicine residents with medical errors in the emergency department. *Advances in Biosciences & Clinical Medicine*, 2(2), 49. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6575121/>
- Adriaenssens, J., De, G. V., & Maes, S. (April 01, 2015). Causes and consequences of occupational stress in emergency nurses, a longitudinal study. *Journal of Nursing Management*, 23, 3, 346-358. Retrieved from <https://www.hindawi.com/journals/bmri/2019/6462472/>
- Adriaenssens, J., De, G. V., & Maes, S. (April 01, 2015). Causes and consequences of occupational stress in emergency nurses, a longitudinal study. *Journal of Nursing Management*, 23, 3, 346-358.
- Antonovsky, A. (1987). *Unravelling the mystery of health. How people manage stress and stay well*. San Francisco: Jossey-Bass Publishers.
- Antonovsky, A. (1988). *Unravelling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass Publ.
- Antonovsky, H., & Sagy, S. (1986). The development of a sense of coherence and its impact on responses to stress situations. *Journal of Social Psychology*, 126(2), 213-226.
- Brady, L. (2017). The role of sense of coherence in stressor appraisal. Thesis. Available at <https://scholar.utc.edu/cgi/viewcontent.cgi?article = 1664&context = theses>
- Bragard, I., Dupuis, G., & Fleet, R. (2015). Quality of work life, burnout, and stress in emergency department physicians: a qualitative review. *European Journal of Emergency Medicine*, 22(4), 227-234.

- Brotheridge, C. M., & Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of “people work”. *Journal of vocational behavior*, 60(1), 17-39.
- Bryman, A. (2015). *Social research methods*. City, State: Oxford university press.
- Burbeck, R., Coomber, S., Robinson, S. M., & Todd, C. (2002). Occupational stress in consultants in accident and emergency medicine: a national survey of levels of stress at work. *Emergency Medicine Journal*, 19(3), 234-238. Available from <http://urgentologie.free.fr/dmdocuments/politique/Restructuration/2010-10-21%20-%20SESMAT%20-%20emergency%20physician%20stress%20-%20emj.pdf>
- Carlton, E. L., Holsinger, J. J. W., & Anunobi, N. W. (July 01, 2016). Physician engagement with health information technology: Implications for Practice and Professionalism. *International Journal of Computers in Clinical Practice*, 1, (2) 51-73.
- Chapman DM (1997). Burnout in emergency medicine: What are we doing to ourselves? *AcadEmerg Med*, 4(4): 245–247. Available from <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1553-2712.1997.tb03543.x>
- Crane, P. B. (2007). Commentary on “nursing home residents’ sense of coherence and functional status. *Journal of Holistic Nursing*, 25(2), 104-105. Available at https://libres.uncg.edu/ir/uncg/f/P_Crane_Commentary_2007.pdf
- Doan–Wiggins, L., Zun, L., Cooper, M. A., Meyers, D. L., Chen, E. H., & Force, F. T. W. T. (1995). Practice satisfaction, occupational stress, and attrition of emergency physicians. *Academic Emergency Medicine*, 2(6), 556-563.
- Drageset, J., Espehaug, B., Hallberg, I. R., & Natvig, G. K. (2014). Sense of coherence among cognitively intact nursing home residents - a five-year longitudinal study. *Aging & Mental Health*, 18, 7, 889-896.

- Ekwall, A. K., Sivberg, B., & Hallberg, I. R. (March 01, 2007). Older caregivers' coping strategies and sense of coherence in relation to quality of life. *Journal of Advanced Nursing*, 57, 6, 584-596.
- Eriksson, M. (2017). The sense of coherence in the salutogenic model of health. In *the Handbook of Salutogenesis* (pp. 91-96). Springer, Cham. CA: University of California Press. Available from <https://www.ncbi.nlm.nih.gov/books/NBK435812/>
- Eriksson, M., & Lindstrom, B. (2007). Antonovsky's sense of coherence scale and its relation with quality of life: a systematic review. *Journal of Epidemiology and Community Health*, 61, 11, 938-944.
- Eriksson, Monica, Lindström, Bengt, & Lilja John. (2007). *A sense of coherence and health. Salutogenesis in a Societal Context: Åland, a Special Case?* BMJ Group.
- Ezeamama, A. E., Elkins, J., Simpson, C., Smith, S. L., Allegra, J. C., & Miles, T. P. (2016). Indicators of resilience and healthcare outcomes: findings from the 2010 health and retirement survey. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 25, 4, 1007-1015.
- Faresjo, T., Karalis, I., Prinsback, E., Kroon, K., & Lionis, C. (2009). Sense of coherence in Crete and Sweden: key findings and messages from a comparative study. *The European Journal of General Practice*, 15, 2, 95-8.
- Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. *Journal of organizational Behavior*, 123-129.
- Frydenberg, E., Lewis, R., & Australian Council for Educational Research. (1997). *Coping scale for adults: Practitioner's kit*. Melbourne, Vic: Australian Council for Educational Research.

- Goldberg, R., Boss, R. W., Chan, L., Goldberg, J., Mallon, W. K., Moradzadeh, D., ... & McConkie, M. L. (1996). Burnout and its correlates in emergency physicians: four years' experience with a wellness booth. *Academic Emergency Medicine*, 3(12), 1156-1164.
- Haratani T. (1993). *Factors affecting mental health status of KANRISHOKU. Digest of Science of Labour*, 48, 336–339.
- Hart, K., Wilson, T., & Hittner, J. (2006). A Psychosocial Resilience Model to Account for Medical Well-being in Relation to Sense of Coherence. *Journal of Health Psychology*, 11, 6, 857-862.
- Hochschild, A. R. (1983). *The Managed heart: Commercialization of human feeling*. Berkeley, CA: University of California Press.
- Horita M, Koshida E, Hirao Y, Matsuo Y. et al. (2007), Relationships of Sense of Coherence (SOC) scale (short form) to stress response and consultation with physicians. *The Teishinigaku*. 59:246–249.
- Hutchinson, T. A., Haase, S., French, S., & McFarlane, T. A. (2014). Stress, burnout and coping among emergency physicians at a major hospital in Kingston, Jamaica. *The West Indian medical journal*, 63(3), 262.
- Iannello, P., & Balzarotti, S. (2014). Stress and coping strategies in the emergency room. *Emergency Care Journal*, 10(2). Add page range.
- Kalemoglu, M., & Keskin, O. (2002). Evaluation of stress factors and burnout in the emergency department staff. *Turkish journal of trauma & emergency surgery: TJTES*, 8(4), 215-219.

- Kikuchi, Y., Nakaya, M., Ikeda, M., Okuzumi, S., Takeda, M., & Nishi, M. (January 01, 2014). Relationship between depressive state, job stress, and sense of coherence among female nurses. *Indian Journal of Occupational and Environmental Medicine*, 18, 1, 32-5.
- Kleiveland, B., Natvig, G. K., & Jepsen, R. (2015). Stress, sense of coherence and quality of life among Norwegian nurse students after a period of clinical practice. *PeerJ*, (12) 3, e1286.
- Kretowicz, K., & Bieniaszewski, L. (January 01, 2015). Determinants of sense of coherence among managerial nursing Staff. *Annals of Agricultural and Environmental Medicine*, 22, 4, 713-7.
- Langeland, E, Robinson, H.S Moum, T, Larsen, M.H, Krogstad, A.L & Wahl, A.K (2013). Promoting sense of coherence: Salutogenesis among people with psoriasis undergoing patient education in climate therapy. *BMC Psychology*, 1 (11).
<https://doi.org/10.1186/2050-7283-1-11>
- Lerdal, A., Fagermoen, M. S., Bonsaksen, T., Gay, C. L., & Kottorp, A. (2014). Rasch analysis of the sense of coherence scale in a sample of people with morbid obesity—a cross-sectional study. *BMC psychology*, 2(1), 1.
- Lewis, S. L., Bonner, P. N., Campbell, M. A., & Cooper, C. L. (January 01, 1994). Personality, Stress, Coping, and Sense of Coherence Among Nephrology Nurses in Dialysis Settings. *Anna Journal*, 21, 6, 325.
- Li, L., Hu, H., Zhou, H., He, C., Fan, L., Liu, X., & Sun, T. (2014). Work stress, work motivation and their effects on job satisfaction in community health workers: a cross-sectional survey in China. *BMJ Open*, 4(6), e004897.
- Li, M. (2015). The Relationship Among Sense of Coherence, Coping Strategies, and Interpersonal Patterns: A Cross-Cultural Study. ACA Knowledge Center. Article 63.

- Available at https://www.counseling.org/docs/default-source/vistas/article_63875a22f16116603abcacff0000bee5e7.pdf?sfvrsn=194c422c_4
- Lindström, B., & Eriksson, M. (2005). Salutogenesis. *Journal of Epidemiology & Community Health, 59*(6), 440-442.
- Lu, D. W., Dresden, S., McCloskey, C., Branzetti, J., & Gisondi, M. A. (2015). Impact of burnout on self-reported patient care among emergency physicians. *Western Journal of Emergency Medicine, 16*(7), 996. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4703144/>
- Malinauskiene, V., Leisyte, P., & Malinauskas, R. (January 01, 2009). Psychosocial job characteristics, social support, and sense of coherence as determinants of mental health among nurses. *Medicina (Kaunas, Lithuania), 45*, 11, 910-7.
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry, 15*(2), 103-111.
- McCubbin, H. I. (1998). *Stress, coping, and health in families: Sense of coherence and resiliency*. Thousand Oaks, Calif. Sage Publishers.
- Mendy, J. P. (2016, June). Teaching and learning research methods: towards developing a deeper appreciation of their assumptions. In *European Conference on Research Methodology for Business and Management Studies* (p. 193). Academic Conferences International Limited.
- Mittelmark, M. B., Sagy, S., In Eriksson, M., Bauer, G. F., Pelikan, J. M., Lindström, B., & Espnes, G. A. (2017). *The Handbook of Salutogenesis*. Available at <https://www.ncbi.nlm.nih.gov/books/NBK435831/>

- Miyata, C., Arai, H., & Suga, S. (2015). Characteristics of the nurse manager's recognition behavior and its relation to sense of coherence of staff nurses in Japan. *Collegian*, 22(1), 9-17. Available at <https://pdfs.semanticscholar.org/f8a9/a9f4196dbff63c8586f412f3407eac88b319.pdf>
- Naseem, K. (2018). Job Stress, Happiness and Life Satisfaction: The Moderating Role of Emotional Intelligence Empirical Study in Telecommunication Sector Pakistan. *J. Soc. Sci*, 4(1), 7-14.
- Naudé, J. L., & Rothmann, S. (2006). Work-related well-being of emergency workers in Gauteng. *South African Journal of Psychology*, 36(1), 63-81.
- Nene, N. (2006). *Compassion Fatigue And The Sense Of Coherence In Caregivers Working With Sexually Abused Children In Soweto*. University of the Witwatersrand.
- Palsson, M.-B., Hallberg, I. R., Norberg, A., & Bjorvell, H. (1996). Burnout, empathy and sense of coherence among Swedish district nurses before and after systemic clinical supervision. *Scandinavian Journal of Caring Sciences*, 10, 1, 19.
- Poppius, E., Tenkanen, L., Kalimo, R., & Heinsalmi, P. (1999). The sense of coherence, occupation and the risk of coronary heart disease in the Helsinki Heart Study. *Social Science & Medicine* (1982), 49, 1, 109-20.
- Rice, V. H. (2012). *Handbook of stress, coping, and health: Implications for nursing research, theory, and practice*. Thousand Oaks: SAGE Publications.
- Richardson, C. G., & Ratner, P. A. (2005). Sense of coherence as a moderator of the effects of stressful life events on health. *Journal of Epidemiology & Community Health*, 59(11), 979-984.

- Rushton, C. H., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burnout and resilience among nurses practicing in high-intensity settings. *American Journal of Critical Care*, 24(5), 412-420.
- Saijo, Y., Yoshioka, E., Kawanishi, Y., Nakagi, Y., Ito, T., Sugioka, Y., Yoshida, T., ... Kitaoka-Higashiguchi, K. (August 01, 2013). Job stress and burnout among urban and rural hospital physicians in Japan. *Australian Journal of Rural Health*, 21, 4, 225-231.
- Sarenmalm, E. K., Browall, M., Persson, L. O., Fall-Dickson, J., & Gaston-Johansson, F. (2013). Relationship of sense of coherence to stressful events, coping strategies, health status, and quality of life in women with breast cancer. *Psycho-oncology*, 22(1), 20-27.
- Schmitz, G. R., Clark, M., Heron, S., Sanson, T., Kuhn, G., Bourne, C., ... & Coomes, J. (2012). Strategies for coping with stress in emergency medicine: Early education is vital. *Journal of emergencies, trauma, and shock*, 5(1), 64.
- Schooley, B., Hikmet, N., Tarcan, M., & Yorgancioglu, G. (2016). Comparing burnout across emergency physicians, nurses, technicians, and health information technicians working for the same organization. *Medicine*, 95, 10, 1-18.
- Sharma, M. (2017). *Theoretical foundations of health education and health promotion*. Burlington, MA : Jones & Bartlett Learning
- Sharma, M., & Petosa, R. L. (2014). *Measurement and evaluation for health educators*. Jones & Bartlett Publishers.
- Sharma, M., Atri, A., & Branscum, P. (2012). *Foundations of mental health promotion*. Jones & Bartlett Publishers.
- Stephens, T., Dulberg, C., & Joubert, N. (1999). Mental health of the Canadian population: a comprehensive analysis. *Chronic Diseases in Canada*, 20, 3, 118-26.

Super, S., Wagemakers, M. A. E., Picavet, H. S. J., Verkooijen, K. T., & Koelen, M. A. (2015).

Strengthening sense of coherence: opportunities for theory building in health promotion.

Health promotion international, 31(4), 869-878.

Taylor, D. M., Pallant, J. F., Crook, H. D., & Cameron, P. A. (2004). The psychological health of emergency physicians in Australasia. *Emergency Medicine Australasia*, 16(1), 21-27.

Abstract

Tei, S., Becker, C., Sugihara, G., Kawada, R., Fujino, J., Sozu, T., Murai, T., ... Takahashi, H.

(February 01, 2015). Sense of meaning in work and risk of burnout among medical professionals. *Psychiatry and Clinical Neurosciences*, 69, 2, 123-124.

Tomotsune, Y., Sasahara, S., Umeda, T., Hayashi, M., Usami, K., Yoshino, S., Kageyama, T., ...

Matsuzaki, I. (2009). The Association of Sense of Coherence and Coping Profile with Stress among Research Park City Workers in Japan. *Industrial Health*, 47, 664-672.

Urakawa, K., Yokoyama, K., & Itoh, H. (2012). Sense of coherence is associated with reduced psychological responses to job stressors among Japanese factory workers. *Bmc Research Notes*, 5, 1, 1-6.

Van der Colff, J.J., & Rothmann, S. (2009). Occupational stress, sense of coherence, coping,

burnout and work engagement of registered nurses in South Africa. *SA Journal of*

Industrial Psychology/SA TydskrifvirBedryfsielkunde, 35(1), Art. #423, 10 pages. DOI: 10.4102/sajip.v35i1.423

Vogt, W. P. (Ed.). (2011). *SAGE quantitative research methods*. Sage.

Welp, A., Meier, L. L., & Manser, T. (2015). Emotional exhaustion and workload predict

clinician-rated and objective patient safety. *Frontiers in psychology*, 5, 1573.

- Xiao, Y., Wang, J., Chen, S., Wu, Z., Cai, J., Weng, Z., Li, C., ... Zhang, X. (December 01, 2014). Psychological distress, burnout level and job satisfaction in emergency medicine: A cross-sectional study of physicians in China. *Emergency Medicine Australasia*, 26, 6, 538-542.
- Yam, B. M., & Shiu, A. T. (January 01, 2003). Perceived stress and sense of coherence among critical care nurses in Hong Kong: a pilot study. *Journal of Clinical Nursing*, 12, 1, 144-6.
- Yeh, S.-C. J., Huang, C.-H., & Chou, H.-C. (July 01, 2008). Relationships among coping, comorbidity and stress in patients having haemodialysis. *Journal of Advanced Nursing*, 63, 2, 166-174.
- Zammuner, L., Lotto, V., & Galli, C. (2003). Regulation of emotions in the helping professions: nature, antecedents and consequences. *Australian e-Journal for the Advancement of Mental Health*, 2(1), 43-55.