BURNOUT RATES IN

OKLAHOMA STATE UNIVERSITY – COLLEGE OF

OSTEOPATHIC MEDICINE ALUMNI

By

JESSE CHAFFIN

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OKLAHOMA STATE UNIVERSITY – COLLEGE OF

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Thesis Approved:

Denna Wheeler PhD

Thesis Adviser

Randy Hubach PhD

Julie Croff PhD

Name: JESSE CHAFFIN

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Title of Study: BURNOUT RATES IN OKLAHOMA STATE UNIVERSITY – COLLEGE OF OSTEOPATHIC MEDICINE ALUMNI

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Abstract:

Background

Today's public health workforce is operating at maximum capacity while experiencing a tremendous shortage in physicians nationwide. Physician burnout is causing threats to the care continuum with increases in medical errors, decreased quality of patient care, and physicians leaving the field all together. Physician burnout rates are growing each year. Burnout rates in the allopathic community has been heavily studied. There are few studies that examine burnout rates in osteopathic physicians.

Methods

I conducted a survey based study of Oklahoma State University – College of Osteopathic alumni. This exploratory study used convenience sampling to estimate burnout rates among osteopathic physicians and identified relationships of burnout among demographic variables and practice characteristics.

Results

Of 2,134 email invitations sent to alumni, 409 (19%) responded to the survey. When assessed using the Maslach Burnout Inventory – Human Services Survey, 70.7% of physicians reported at least 1 manifestation of burnout. Burnout rates varied among demographic categories, but only gender and race were found to be statistically significant. In terms of gender, more females (78%) than males (67%) were experiencing burnout. In relation to race/ethnicity, African American and White were similar with burnout rates around 75% and the Hispanic population experienced the lowest at 25%. There were no other significant relationships identified. Burnout rates of the sample were high compared to the national range (71% vs. 22 – 76%). Emotional exhaustion was determined to be higher than the national range (66% vs. 20 – 47%). Depersonalization was high compared to the national range (46% vs. 13 – 50%). Sense of personal accomplishment was much higher compared to the national range (90% vs. 12 – 61%).

Conclusion

Results from this study indicate that burnout rates are high in OSU COM alumni. Additional research is needed to assess burnout rates among a larger population of osteopathic physicians. Specifically, additional research is needed to fully explore the relationship between all three constructs of burnout, (emotional exhaustion, depersonalization, and personal accomplishment), and determine if increased personal accomplishment affects the effects of burnout. Research is also needs to be initiated on outcome driven wellness programming with efforts at reducing burnout in physicians.

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CHAPTER I

INTRODUCTION

Background of the Study

Physicians are a critical component of the public health workforce. With activities directed at health surveillance, protection, promotion, planning, regulation, and health services organization, delivery, and evaluation, the public health workforce is the Nation's front line of defense in response to emerging communicable diseases (e.g., Ebola and avian influenza), prevention of environmental hazards (e.g., protect food security and combat climate change) and reduction of chronic disease (e.g., obesity and its myriad health consequences). Physicians also assist communities in preparing for disasters such as earthquakes and biological and chemical terrorist attacks (Rosenstock et al., 2008). Today's public health workforce is operating at maximum capacity while experiencing a tremendous shortage in public health employees (Rosenstock et al., 2008). The Institute of Medicine states that there is a shortage of 10,000 public health physicians, which is double the current estimate of practicing public health physicians (Mullan, Panosian, & Cuff, 2005). These shortages have done nothing, but add to the growing crisis related to health disparities in respect to racial and ethnic parity, and geographic maldistribution. The Sullivan Commission on Diversity in the Healthcare Workforce states: "Today's physicians, nurses, and dentists have too little resemblance to the diverse populations they serve, leaving many Americans feeling

excluded by system that seems distant and uncaring. The fact that the nation's health professions have not kept pace with changing demographics may be an even greater cause of disparities in health access and outcomes than the persistent lack of health insurance for tens of millions of Americans" (Sullivan, 2004).

Already experiencing a shortage, physicians are fighting a losing battle in regards to physician burnout. Rates of physician burnout have been increasing on an annual basis, increasing 20% over the past decade, to the rate that currently surpasses 50% (Shanafelt, Boone, Tan, & et al., 2012). Burnout is defined as a low sense of worth, living life without meaning, and the psychological detachment from one's true self (Maslach, Jackson, & Leiter, 1996). Physician burnout is a public health crisis which creates a direct threat to the United States healthcare system by impacting patient safety and healthcare costs (Liselotte N Dyrbye & Shanafelt, 2011). Physicians experiencing burnout have lower patient satisfaction and quality of care (Firth-Cozens & Greenhalgh, 1997; Hampton, 2005).

Personal and organizational factors are known to contribute to physician burnout. Personal factors include neglecting sleep and self-care, or experiencing chronic anxiety and stress for long periods of time (Drolet & Rodgers, 2010). Organizational factors include work control, work-life balance, supervisory support, and career-fit (Keeton, Fenner, Johnson, & Hayward, 2007; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015).

While burnout is highly researched among allopathic physicians, there is a dearth of research focused on burnout among osteopathic physicians. This is primarily due to the small number of osteopathic physicians nationally: only 8.5% of licensed physicians in the United States are osteopathic physicians (Young et al., 2017). In contrast, 36% of active physicians in Oklahoma are osteopathic physicians. This difference is likely due to the fact that Oklahoma is home to one of the largest osteopathic medical schools in the nation, Oklahoma State University – College of Medicine (OSU COM).

There are two dominating philosophies in medicine: osteopathic and allopathic. While the allopathic philosophy is focused on physical symptoms of disease, osteopathic medicine is a holistic approach that focuses on all phases of health including physical, mental, emotional and spiritual health (Seffinger et al., 2003a). Incorporating this holistic approach helps align the body, mind, and spirit to provide the necessary tools for the body to heal itself (Paulus, 2013; Seffinger et al., 2003a). Osteopathy is guided by a set of core principles. The original principles were introduced in 1953 as four tenets:

1. The human being is a dynamic unit of function.
2. The body possesses self-regulatory mechanisms that are self-healing in nature.
3. Structure and function are interrelated at all levels.
4. Rational treatment is based on these principles.

These principles were edited from osteopathy's founder, Andrew Still's collection of works (Cotton, 2013). Still introduced osteopathy as drugless, manipulative medicine (Cotton, 2013). This philosophy relied heavily on the body maintaining a state of harmony or equilibrium. This balance would prove to be one of the fundamental structures of osteopathic medicine (Seffinger et al., 2003a).

Throughout the osteopathic medical curriculum at OSU-COM, students are taught a holistic approach to medicine and how the mind, body, and spirit all affect health. Theoretically, osteopathic physicians, trained in holistic medicine, should have lower rates of burnout as compared to allopathic physicians. If medical students have taken this philosophy and applied it into their personal lives, then osteopathic physicians should experience a difference in burnout rates when compared to allopathic physicians.

Problem Statement

Physician burnout rates are growing each year (Shanafelt, Boone, Tan, & et al., 2012). Many have studied the effects of burnout and different relationships such as practice characteristics and demographics, but few have studied the association with teaching philosophy

in medical school. While many studies focus on burnout in allopathic physicians, the osteopathic community goes un-noticed.

Objectives of the Study

The purpose of this study is to document burnout rates in osteopathic physicians. Moreover, this study will allow an examination of demographics and practice characteristics which may relate to burnout. Finally, this study will document differences in burnout rates between osteopathic physicians (D.O.) surveyed for the current study and physician burnout rates reported in the published literature. This study was accomplished by surveying the OSU – COM alumni via email questionnaire, and used the Maslach Burnout Inventory (MBI), to assess burnout. Further, demographic information including age, gender, and race/ethnicity and practice characteristics such as practice specialty and office structure were collected to explore associations of these variables with burnout.

Limitations of the Study

Our study was subject to several limitations. First, this thesis study was emailed to OSU COM Alumni and approximately half opened the email message. A response rate of 19% leaves the majority of OSU COM Alumni with no response. In regards to this, we did not offer any incentives to increase participation, though studies have failed to identify this as a significant difference in responding and nonresponding physicians (Kellerman & Herold, 2001). Secondly, this study was cross-sectional in nature and thus causal relationships cannot be determined based on the results gathered for this one section in time. Thirdly, this study's data collection was limited to a two week window of time. Within this two week window, five reminders were sent to those who had not responded and/or provided partial responses. The respondents to this survey could be similar to the law of diffusion of innovations bell curve. Thus, 16% of respondents would encompass the innovators and early adopters groups. Additional time could have aided the recruitment of the early and late majority, which would have given the study an improved response rate.

CHAPTER II

LITERATURE REVIEW

Introduction

Burnout in physicians has gained increasing attention in recent years. The high demands of medical school, residency training, and clinical care have placed those in medical practice at increased risk for burnout (see Table 1) (Dyrbye et al., 2014). The rate of burnout among physicians far exceeds that of the general public (Shanafelt, Boone, Tan, & et al., 2012). Low job satisfaction, decreased quality of patient care, increased risk for medical errors, and increased risk of physician suicide are all negative effects of burnout (Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Gundersen, 2001; Schernhammer & Colditz, 2004). Many studies have documented that work-life balance, workload, job satisfaction, career fit, work control, and organizational leadership are factors that either contribute to or protect against physician burnout (Linzer et al., 2001; Shanafelt, 2009; Shanafelt, Hasan, et al., 2015; Shanafelt, West, Sloan, & et al., 2009; Shirom, Nirel, & Vinokur, 2010). Very few studies, however, have looked the relationship between medical practice philosophy and burnout rates (Yost, Johnson, Johns, & Burchett, 2014).

Public Health Significance

The care continuum is an integral part of public health efforts for preventing, diagnosing, and treating illness nationwide. Any disruption in the care continuum could have negative

consequences on patient outcomes. Any disruption in the care continuum could have negative consequences on patient outcomes. Our country is already experiencing a shortage in physicians. The 2018 report from the Association of American Medical Colleges (AAMC) projects a physician shortage upwards of 121,300 by 2030. In the 2017 report, the AAMC projected a shortage of 104,900 physicians. In just one year the projected shortage has increased by a staggering 20,000 physicians and the data states that upwards of 76% of physicians are burned out and either suffering through the effects, or leaving the profession all together. These numbers hit closer to home when identifying the physician shortage here in Oklahoma. A map developed by the Oklahoma State Department of Health shows that 59 out of 77 counties are medically underserved.

Physicians are tasked with being the first line of defense for the health of the Nation. Physicians not only educate the public on healthy behaviors, but they also diagnose and treat both simple and complex forms of illness. Public health science urges that more specialists be trained in additional sub-disciplines. This sense of being overworked has increased levels of physician burnout nationwide (Shirom, Nirel, & Vinokur, 2010). Physicians that are experiencing burnout are more likely to not follow the correct standards of care and often find themselves making critical medical errors while treating patients (Dyrbye & Shanafelt, 2011; Dyrbye et al., 2014; Shanafelt et al., 2012; Shanafelt, Bradley, Wipf, & Back, 2002). Consistent medical errors such as these have even been reported to lead to incidents in which the patient died (Shanafelt et al., 2002). These effects of burnout cannot continue without drastically compromising the public's health.

Definition of Burnout

Burnout is defined in various ways. Herbert Freudenberger was first to conceptualize burnout as work-related stress connected with job dissatisfaction (Freudenberger, 1980). The World Health Organization International Classification of Diseases (ICD-10) defines burnout as a state of vital exhaustion (World Health Organization, 2016). This state of exhaustion is known to

have a direct correlation with decreased job satisfaction, depersonalization, higher risk for medical errors, decreased patient care, and increased chance for physician suicide (Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Gundersen, 2001; Schernhammer & Colditz, 2004).

Christina Maslach's systematic approach to defining and measuring burnout has been broadly adopted (Maslach, Jackson, & Leiter, 1996). Christina Maslach defines burnout as a syndrome expressing symptoms of high emotional exhaustion, high depersonalization, and having a low sense of personal accomplishment (Maslach, Schaufeli, & Leiter, 2001). Emotional exhaustion is usually what people are referring to when they think about burnout. This level of exhaustion is known as the individual stress component of burnout and is often referred to as being depleted of energy both physically and emotionally. The depersonalization component is known as the interpersonal dimension of burnout. It often portrays a loss of emotional connection in the workplace. Reduced sense of personal accomplishment is the self-evaluation dimension of burnout. Individuals often times have feelings of doubt in their work productivity and a feeling of incompetence (Maslach et al., 2001). These 3 elements serve as the core constructs for measuring burnout.

Burnout in the U.S. General Public

Job burnout is a growing problem in the United States (U.S.) (Shanafelt, Hasan, et al., 2015). Work-life balance, job satisfaction, and control over work schedule are all known to be correlated with burnout rates (Keeton, Fenner, Johnson, & Hayward, 2007; Shanafelt, Hasan, et al., 2015; Shirom et al., 2010). Burnout rates in the American public range from 25% to 40% (Brazeau et al., 2014; Dyrbye et al., 2014; Shanafelt et al., 2012; Shanafelt, Hasan, et al., 2015). It is estimated that 23% of workers feel like there is not enough time to spend with their family (Shanafelt et al., 2012; Shanafelt, Hasan, et al., 2015). Further, 42.4% of the general public report symptoms of depression (Brazeau et al., 2014) and as many as 32% are emotionally exhausted (Dyrbye et al., 2014). These numbers are increasing yearly (Shanafelt, Hasan, et al.,

2015). A study that compared measures of employee work-life balance, burnout, and job satisfaction collected in 2015 to data collected in 2011 found that rates of burnout are increasing, job satisfaction is decreasing, and issues with work-life balance are still on the rise (Shanafelt et al., 2012; Shanafelt, Hasan, et al., 2015). These findings are accelerated for the health care workforce (Shanafelt et al., 2012; Shanafelt, Hasan, et al., 2015)

Burnout in U.S. Medical Trainees and Physicians

Burnout in health care professionals is increasing annually at an alarming rate (Shanafelt, Hasan, et al., 2015). A decade ago, 1 in 3 physicians were experiencing burnout (Shanafelt, 2009). Currently these numbers have increased to 54% (Shanafelt, Hasan, et al., 2015). Physicians risk for burnout is increasing at a rate of roughly 3.5% per year and satisfaction with work-life balance is decreasing roughly 2.5% per year (Shanafelt, Hasan, et al., 2015).

Upon entering medical school, medical students are healthier than their graduate student peers, but tend to be unhealthier when they graduate (Brazeau et al., 2014). The process of medical training appears to have negative effects on health. Medical trainees have reported high rates of emotional exhaustion (36.4%), depersonalization (28.5%), and burnout (45.6%) (see Table 1) (Dyrbye et al., 2014). The good news is, these effects decrease incrementally with each career stage. Burnout rates are the highest in medical students (49.6% and the lowest in early career physicians (37.3%) (Dyrbye et al., 2014). This change suggests that rates could decrease as medical trainees move forward into their career.

Burnout affects all physicians, but specialty physicians at the front line of care access are at the greatest risk with some physician specialties experiencing burnout rates as high as 70% (Shanafelt, Hasan, et al., 2015). Emergency medicine, general internal medicine, and family medicine have the highest burnout rates among physicians, while specialties such as dermatology and general pediatrics have the lowest rates of burnout (Shanafelt, Hasan, et al., 2015). It's evident that something needs to be done in regards to burnout in physicians and medical trainees, but there is no clear consensus on where to start.

Potential Causes of Physician Burnout

There are both personal and organizational factors that contribute to physician burnout (Maslach et al., 2001). Some of the personal factors associated with burnout are thought to be due to the unhealthy habits developed while in medical school such as not getting the required eight hours of sleep, neglecting self-care, and increased anxiety or stress (Drolet & Rodgers, 2010). These unhealthy habits tend to follow the physicians into their practice years after the stress of medical school has subsided. Many of these habits are thought to be associated with physician burnout.

The stigma associated with asking for help, as a physician, deters most from getting the help they need (Wallace, Lemaire, & Ghali, 2009). The majority of patients see their physician's health status as directly related to his/her ability to provide an adequate level of care (Wallace et al., 2009). Knowing this, physicians often come to work when they are feeling unwell and expect their colleagues to do the same, recognizing that they would not place the same expectations on their patients (Wallace et al., 2009). Further, some physicians refrain from seeking help for physical/mental health, or substance-abuse problems because many licensing boards discriminate against these physicians, even if they have received effective treatment and the diagnosis has no effect on their professional skills and abilities (Wallace et al., 2009). These discriminatory acts include, but are not limited to licensing boards having the authority to begin investigations on physicians who seek treatment for substance abuse or mental health counseling. Some investigations have led to sanctions even without evidence of impaired function (Hampton, 2005). Physicians are often reluctant patients and feel that their peers will see them as unable to cope with their work environment (Thompson, Cupples, Sibbett, Skan, & Bradley, 2001; Uallachain, 2008).

Organizational factors also come into play in regards to job satisfaction, one of the strongest predictors of physician burnout (Keeton et al., 2007; Linzer et al., 2001; Shanafelt et al., 2012; Shanafelt, Gorringe, et al., 2015). Mediating factors that connect job satisfaction with

burnout include work control, work-life balance, supervisory support, and career-fit (Keeton et al., 2007; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015). Roughly 40% of physicians feel that their job doesn't leave enough time for family life in comparison to the general public's 23% (Shanafelt et al., 2012). Workload predicts higher levels of burnout and fatigue and physicians work on average 10 hours more per week than population controls (Shanafelt et al., 2012). Another predictor of burnout is career-fit (Shanafelt et al., 2009). Career-fit refers to the amount of time a physician spends on an activity they find most meaningful to them. Shanafelt and colleagues found that physician burnout rates decrease 50% when at least 20% of their time at work is devoted to an activity they found most meaningful to them (Shanafelt et al., 2009). The mediating factors listed above affect burnout indirectly by contributing to the intermediate outcomes, stress and satisfaction, that are precursors to physician burnout (Linzer et al., 2001).

Effects of Burnout in Physicians

Not only does burnout affect physicians personally, but also professionally and has a strong effect on their ability to offer high quality of care (Hampton, 2005). Patient care and patient satisfaction are very important components of hospital and clinic operations. A physician suffering from burnout can have a plethora of ill effects such as high amounts of emotional distress, relationship troubles, depression, and even death (Wallace et al., 2009). Approximately 8 to 12% of all practicing physicians will develop a substance-abuse disorder at some point in their career (Wallace et al., 2009). All of these health outcomes have a direct impact on patient care. Firth-Cozens and Greenhalgh, examined 225 hospital doctors and general practitioners, 82 of which reported that symptoms of stress negatively affected their patient care (Firth-Cozens & Greenhalgh, 1997). Further, 57% of physicians believed that tiredness, exhaustion, and sleep deprivation negatively affected patient care, and another 28% believed that pressures from being overworked were negatively related to patient care (1997). Work related stress led to 50% of physicians reporting reduced standards of patient care (e.g., taking short cuts, not following

procedures), 40% reporting irritability or anger, 7% reporting serious mistakes not leading to patient death, and 4% reporting incidents in which the patient died (1997). Similarly, physicians that had higher overall job satisfaction had a positive effect on the patients' adherence to treatment and actions in managing their chronic diseases (1997).

Conclusion

There are numerous studies that express high burnout rates in physicians (see Table 1 below). It is unclear if the burnout rates documented hold true for osteopathic physicians. Throughout medical school, students attending an osteopathic college focus on a holistic approach to treating patients that includes helping the body align spiritually, structurally, and mentally (Seffinger et al., 2003b). This philosophy is based around treating the individual and not just the symptom will allow the body to heal itself (Paulus, 2013; Seffinger et al., 2003b). Learning this philosophy and applying it to their personal life could be advantageous to adopting healthy behaviors, which in turn could affect burnout rates.

Table 1
Scope and Magnitude of Burnout for Physicians and Medical Trainees as a Priority Group

Citation	Practice Type	Sample Pop	Sample Size	Mean Age in Years	% Male	Burnout Rate
Chan, Cuevas, & Jenkins II, 2016	Hospital	1st year Residents	131		71	NP
Dyrbye et al., 2014	Physician Master File and AOA Permission	Medical students, residents/ fellows, Early career physicians	6950	31	47	56%
Linzer et al., 2001	Solo=17%; Group=60%; Academic=15%	Physicians	1349	47	67	22%
Shanafelt et al., 2012	Physician Master File	Physicians in Primary Care=26.4% Not in Primary=73.6%	7288	55	72	45%
Shanafelt et al., 2009	Academic Medical Center	Physician Faculty	465	45-54	77	34%
Brazeau et al., 2014	Medical School	Medical Students	582	<25	54	27%
Dyrbye, Thomas, Huntington, et al., 2006	Medical School	Medical Students	544	25-30	45	45%
Dyrbye, Thomas, Huschka, et al., 2006	Medical School	Medical Students	537	25-30	45	44%
Fahrenkopf et al., 2008	Hospital	Pediatrics Residents	123	<30	30	75%
Shanafelt, Hasan, et al., 2015	Physician Master File	Primary Care=23.3% Not Primary=76.6%	6880	56	68	54%
Shanafelt, Gorringe, et al., 2015	Academic, Community Based Hospital, Health Care Facility	Physicians	2813	45-54	71	40%
Shanafelt et al., 2002	University	Internal Medicine Residents	115			76%

CHAPTER III

METHODOLOGY

Study Design

I conducted a survey-based study of Oklahoma State University – College of Medicine (OSU COM) alumni. This exploratory study used convenience sampling to estimate burnout rates among osteopathic physicians. Prior to the initiation of the study, procedures were approved by the Institutional Review Board (IRB) at Oklahoma State University – Center for Health Sciences.

Sample Population

Participants of this study were selected from the Oklahoma Physician Directory and from the OSU COM Alumni database. Eligibility criteria included: 1) being a licensed Osteopathic physician in Oklahoma; and 2) being an OSU College of Osteopathic Medicine alumni. A contact list of OSU COM alumni email addresses was generated by the OSU COM Director of Alumni Affairs. There were 2,134 email invitations sent to alumni, 95 email addresses bounced, and 832 physicians did not open the email invitation. Of the 1,083 participants who opened the invite, 124 opted out and 511 clicked through without responding. Of the 409 physicians who completed at least part of the survey, 38 provided partial responses leaving 371 complete responses.

Measures

Burnout rates were measured by the Maslach Burnout Inventory – Human Services Survey (MBI-HSS). The (MBI-HSS) is the most widely used measure of burnout for professionals in the health field. It is considered the gold standard of assessing job burnout (Maslach et al., 2008). The MBI-HSS is a questionnaire that measures 3 core elements in workplace engagement: level of enthusiasm (emotional exhaustion), connectedness (depersonalization), and sense of personal accomplishment (Maslach et al., 1996; Maslach et al., 2008; Maslach et al., 2001). A meta-analytic study was conducted to estimate and identify the reliability of the MBI-HSS. The study examined 45 empirical studies, which showed an average reliability of .88 for emotional exhaustion, .71 for depersonalization, and .78 for personal accomplishment (Aguayo, Vargas, de la Fuente, & Lozano, 2011).

In addition to the MBI, participants are asked a variety of demographic and professional practice questions. These included questions about practice characteristics, including specialty choice (i.e., family medicine, pediatrics, etc.), practice type (i.e., physician owned, system owned, solo/partnership, large group, etc.) and practice location (rural, suburban, urban). Demographic questions included age, year of graduation, race, and gender. This questionnaire was completely anonymous. Survey Monkey provides an anonymous setting that removes the participants email accounts and other identifying information (i.e., IP address, custom data fields, etc.), so participants will be de-identified. Survey Monkey has a privacy policy that ensures the safety of participant information. See the full policy at https://www.surveymonkey.com/mp/legal/privacy-policy/.

Data Collection

Survey Monkey was used for the creation and distribution of the questionnaire. The questionnaire was active for two weeks and reminders were distributed periodically throughout the two weeks. Upon opening the questionnaire, participants were briefed on informed consent and given the option to proceed or opt out.

Data Analysis

The data were extracted from Survey Monkey and downloaded to SPSS 24 for analysis. Descriptive statistics were used to characterize the sample population. These descriptive statistics were summarized using frequencies and summary statistics. The MBI uses three core constructs to evaluate burnout: emotional exhaustion (EE), depersonalization (DP), and sense of personal accomplishment (PA). The three constructs of burnout were each scored individually using the Scoring & Interpretation Key – MBI HSS (see Appendix A). Levels of EE, DP, and PA were divided into 3 categories (low, moderate, and high) based on previously published scoring criteria (Maslach, Leiter, & Schaufeli, 2008) (see Appendix A). EE scores were interpreted as low (≤ 16), moderate (17 – 26), and high (≥ 27). DP scores were interpreted as low (≤ 6), moderate (7 – 12), and high (≥ 13). PA scores were interpreted as low (≤ 31), moderate (32 – 38), and high (≥ 39). Physicians were considered to be experiencing at least 1 symptom of burnout if they had a high depersonalization and/or emotional exhaustion score. Additionally, we examined differences in MBI scores based on gender, specialty, practice characteristics, etc. and significance of these relationships were identified using a Chi Square analysis with a p-value of 0.05.

Conclusion

OSU COM alumni who are actively practicing medicine were surveyed using an email based questionnaire. Survey Monkey was the platform used in this process. The questionnaire consisted of the MBI-HSS and a variety of demographic and professional practice questions. The data were extracted and analyzed to look for differences in MBI scores based on gender, specialty, practice characteristics, etc. Respondents in this survey remained completely anonymous.

CHAPTER IV

RESULTS

Descriptive Statistics of the Sample

A majority of survey participants were White (84.2%) and male (63%) (see Table 2 for a full demographic profile). When asked to provide their age, the median age range of participants were between 45 - 54 years. In regards to year of medical school graduation, the median range for participants graduated between 1991 - 2000.

Table 2
Demographic Characteristics and Burnout Rates of Responding OSU COM Alumni

Characteristic	**Respondents**	**Burnout Rates**
Gender. No. (%)	**(n = 366)**	**(n = 248)**
Male	231 (63)	149 (66.5)
Female	134 (37)	99 (78)
Race/Ethnicity No. (%)	**(n = 366)**	**(n = 249)**
White	308 (84.2)	218 (74.4)
African American	8 (2.2)	6 (75)
Hispanic	4 (1.1)	1 (25)
Native American/ Alaska Native	21 (5.7)	13 (61.9)
Asian	15 (4.1)	7 (46.7)
Other	10 (2.8)	4 (44.4)
Age No. (%)	**(n = 367)**	**(n = 249)**
<35	47 (12.8)	35 (74.5)
35 – 44	110 (30)	74 (67.9)
45 – 54	71 (19.3)	53 (77.9)
55 – 64	90 (24.5)	61 (73.5)
65+	49 (13.4)	26 (57.8)

Table 2 Continued Demographic Characteristics and Burnout Rates of Responding OSU COM Alumni		
Characteristic	**Respondents**	**Burnout Rates**
Medical School Graduation Year No. (%)	**(n = 369)**	**(n = 249)**
<1980	28 (7.6)	18 (72)
1980 – 1990	91 (24.7)	56 (68.3)
1991 – 2000	76 (20.6)	57 (77)
2001 – 2010	114 (30.9)	79 (70.5)
>2010	60 (16.3)	39 (66.1)

Practice Characteristics of the Sample

Nearly a quarter of the participants reported working in a small group, single specialty practice. Slightly fewer (23%) reported working in a hospital setting. Practice characteristics were asked to determine primary clinical discipline or specialty and a high amount of respondents reported working in family medicine (31.7%). When asked about practice/facility employment relationship the majority reported working for a health system (42.7%) or in a physician owned clinic (31.8%). In terms of practice location, most of respondents are working in a large metro area (44.8%) as opposed to small metro or rural setting. For a full description of practice characteristics see Table 3.

Table 3 Practice Characteristics and Burnout Rates of Responding OSU COM Alumni		
Characteristic	**Respondents**	**Burnout Rates**
Practice Facility Type, No. (%)	**(n = 369)**	**(n = 249)**
Solo Practitioner	48 (13)	31 (67.4)
Small Group Practice (Single Specialty)	91 (24.7)	66 (74.2)
Large Group Practice (Multiple Specialty)	53 (14.4)	33 (63.5)
Hospital	84 (22.8)	58 (69.9)
ITU	13 (3.5)	9 (75)
Behavioral Health	7 (1.9)	5 (71.4)
Locum Tenens	2 (0.5)	1 (50)
Retired	12 (3.3)	8 (88.9)
Administration	7 (1.9)	3 (75)
Veterans Administration	8 (2.2)	5 (71.4)
Other	44 (11.9)	30 (73.2)

Table 3 Continued **Practice Characteristics and Burnout Rates of Responding OSU COM Alumni**		
Characteristic	**Characteristic**	**Characteristic**
Primary Clinical Discipline or Specialty, No. (%)	**(n = 369)**	**(n = 249)**
Family Medicine	117 (31.7)	79 (73.1)
Internal Medicine	23 (6.2)	18 (81.8)
Pediatrics	19 (5.1)	14 (73.7)
Obstetrics/Gynecology	21 (5.7)	13 (65)
Emergency Medicine	54 (14.6)	39 (73.6)
Surgery	13 (3.5)	9 (75)
Cardiology	6 (1.6)	5 (83.3)
Hematology/Oncology	2 (0.5)	2 (100)
N/A	2 (0.5)	1 (100)
Other	112 (30.4)	69 (63.3)
Practice/Facility Employment Relationship, No. (%)	**(n = 368)**	**(n = 249)**
Physician Owned	117 (31.8)	81 (70.4)
Health System Employed	157 (42.7)	107 (70.4)
Federal Government Employed	29 (7.9)	19 (76)
N/A	10 (2.7)	5 (71.4)
Other	55 (14.9)	37 (71.2)
Practice Location, No. (%)	**(n = 366)**	**(n = 248)**
Large Metro	164 (44.8)	121 (77.6)
Small Metro/Suburban	94 (25.7)	57 (63.3)
Small Town	69 (18.9)	46 (68.7)
Rural	39 (10.7)	24 (64.9)

Burnout Rates of the Sample

The EE scale consisted of nine items and the internal reliability consistency estimate was .94 (m = 33.32, sd = 13.33). The DP scale consisted of five items and the internal reliability consistency estimate was .79 (m = 13.43, sd = 6.77). The PA scale consisted of eight items and the internal reliability consistency estimate was .80 (m = 47.74, sd = 6.99) (see Table 4). Correlations exist among EE, DP, and PA are statistically significant ($p < .01$). Specifically, the correlation between EE and DP is 0.63. The negative correlation between EE and PA is -0.45. The negative correlation between DP and PA is -0.37.

Table 4 **Burnout Rates in Responding OSU COM Alumni**	
Variable	**Value**
Emotional Exhaustion	
Mean	33.32
Standard Deviation	13.334
Score Level, No. (%)	(n = 354)
Low ≤ 16	40 (11.3)
Moderate 17 – 26	82 (23.2)
High ≥ 27	232 (65.5)
Depersonalization	
Mean	13.43
Standard Deviation	6.767
Score Level, No. (%)	(n = 363)
Low ≤ 6	49 (13.5)
Moderate 7 – 12	146 (40.2)
High ≥ 13	168 (46.3)
Personal Accomplishment	
Mean	47.74
Standard Deviation	6.985
Score Level, No. (%)	(n = 354)
Low ≤ 31	11 (3.1)
Moderate 32 – 38	25 (7.1)
High ≥ 39	318 (89.8)
Burned Out, No. (%)*	249 (70.7)
*Burnout rates were determined when a respondent exhibits high rates of depersonalization and/or emotional exhaustion.	

Comparison of Burnout Rates of the Sample to the National Range

Among the physician alumni who participated in the survey, 70.7% were found to be experiencing at least 1 symptom of burnout. More specifically, approximately two-thirds (66%) had high levels of EE (see Table 5) and approximately 46% reported high DP. In contrast, PA levels were consistently high with nearly 90% of participants in the high category. Burnout, EE, DP, and PA were all high in comparison to the national range (see Table 5).

Table 5 **OSU COM Alumni Burnout Rates, EE Scores, DP Scores, and PA Scores in Comparison to the National Range.**		
Variables	**OSU COM Results**	**National Range***
Burnout	70.7%	22 – 76%
Emotional Exhaustion	65.5%	30.2 – 46.9%
Depersonalization	46.3%	13.3 – 49.6%
Personal Accomplishment	89.8%	12.4 – 61.2%
*The national range was identified by reviewing twelve studies of burnout in physicians using the MBI.		

Relationship between Burnout Rates and Demographics

Burnout rates varied among demographic categories, but only gender and race were found to be statistically significant. In terms of gender, more females (78%) than males (67%) had at least one manifestation of burnout. Looking more closely at sub-scale scores for EE, DP, and PA, an independent-samples *t* test comparing the mean EE scores of male and female groups revealed a significant difference between the means of the two groups ($t(351) = -2.190$, $p < .05$). The mean of the female group was significantly higher ($m = 35.35$, $sd = 12.46$) than the mean of the male group ($m = 32.14$, $sd = 13.66$). An independent-samples *t* test comparing the mean DP scores of male and female groups. No significant difference was found ($t(360) = .123$, $p > .05$). The mean of male DP scores ($m = 13.31$, $sd = 7.0$) were not significantly different from the mean of female DP scores ($m = 13.22$, $sd = 6.3$). An independent-samples *t* test comparing the mean PA scores of male and female groups. No significant difference was found ($t(351) = 1.38$, $p > .05$). The mean of male PA scores ($m = 48.1$, $sd = 7.03$) were not significantly different from the mean of female PA scores ($m = 47.03$, $sd = 6.78$). In relation to race/ethnicity, African American and White were very similar with burnout rates around 75% and the Hispanic population experienced the lowest at 25% (see Table 2). There were no significant differences in burnout rates based on age, year of medical school graduation, practice/facility employment relationship, practice location, practice/facility type, and specialty. Those who were between ages 45-54 reported the highest rates of burnout by age (77.9%). In terms of year of medical

school graduation, those who graduated between the years 1991-2000 had the highest rates of burnout (77%) (see Table 2).

Relationship between Burnout Rates and Practice Characteristics

There were no significant differences in burnout rates based on practice/facility employment relationship, practice location, practice/facility type, or specialty Burnout rates were highest for those working for the federal government (76%). Working in a large metro setting was reported to have highest burnout rates (77.6%) in terms of practice location. In relation to practice/facility type, those who worked in a large group practice (multiple specialties) experienced the lowest rates of burnout and those who were retired had the highest rates of burnout (88.9%). Hematology/Oncology reported the highest rates of burnout for specialty (100%) (see Table 3).

Summary

This study identified burnout rates for a sample of OSU COM Alumni. Further, three constructs of burnout, EE, DP, and PA, were broken down and scored individually to identify significantly high rates of emotional exhaustion and a sense of personal accomplishment. Additionally, burnout rates were significantly related to both gender with female physicians experiencing higher rates of emotional exhaustion and race with those identifying as African American and White experiencing higher rates of burnout. Variables not associated with burnout include age, medical school graduation year, practice facility type, specialty, practice/facility employment relationship, and practice location.

CHAPTER V

DISCUSSION

The goal of this thesis study was to explore burnout rates of osteopathic (D.O.) physicians and potential factors which may be related to physician burnout. Within the current study, burnout rates were found to be approximately 70.7%. This finding positions the OSU COM Alumni within the higher range of national studies which document the range of burnout rates nationally to between 22 – 76% (Brazeau et al., 2014; Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Dyrbye et al., 2014; Fahrenkopf et al., 2008; Linzer et al., 2001; Shanafelt, 2009; Shanafelt et al., 2012; Shanafelt et al., 2002; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015; Shanafelt et al., 2009).

There are significant gender and race differences in burnout rates among osteopathic physicians. Specifically, 66.5% of the male and 78% of the female sample population were experiencing burnout. This difference in burnout rates were determined to be significant. This is a rare finding among research. Most studies find no significant difference in burnout rates when gender is accounted for (Brazeau et al., 2014; Dyrbye, Thomas, Hunington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Dyrbye, et al., 2014; T.D. Shanafelt, 2009; T.D. Shanafelt et al., 2012; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015; Shanafelt et al., 2009). However, women physicians often find themselves less satisfied with things such as work autonomy, relationships with community, pay, and resources offered while on the job

(McMurray et al., 2000). Additionally, women physicians report having less work control than their male colleagues (McMurray et al., 2000). Work control encompasses different inhibiting and facilitating factors that are associated with burnout, such as, job demands, job resources, job mobility, career fit, and autonomy (Liljegren & Ekberg, 2009; Linzer et al., 2001; Schaufeli, Bakker, & Van Rhenen, 2009). Physicians with low work control are known to have increased levels of burnout (Linzer et al., 2001).

Rates of emotional exhaustion (EE) were much higher in the sample population (65.5%) when compared to the national range (30.2 – 46.9%) (Brazeau et al., 2014; Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Dyrbye et al., 2014; Fahrenkopf et al., 2008; Linzer et al., 2001; Shanafelt, 2009; Shanafelt et al., 2012; Shanafelt et al., 2002; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015; Shanafelt et al., 2009). High rates of depersonalization (DP) (46.3) were high compared to the national range (13.3 – 49.6%) (Brazeau et al., 2014; Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Dyrbye et al., 2014; Fahrenkopf et al., 2008; Linzer et al., 2001; Shanafelt, 2009; Shanafelt et al., 2012; Shanafelt et al., 2002; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015; Shanafelt et al., 2009). A high sense of personal accomplishment (89.8%) was much higher than the national range (12.4 – 61.2%) (Brazeau et al., 2014; Dyrbye, Thomas, Huntington, et al., 2006; Dyrbye, Thomas, Huschka, et al., 2006; Dyrbye et al., 2014; Fahrenkopf et al., 2008; Linzer et al., 2001; Shanafelt, 2009; Shanafelt et al., 2012; Shanafelt et al., 2002; Shanafelt, Gorringe, et al., 2015; Shanafelt, Hasan, et al., 2015; Shanafelt et al., 2009). The rate of high personal accomplishment was a unique finding and is not normally seen in physician populations with high rates of EE and DP. This difference could be due to the sample's level of emotional resilience and control over work schedule. Although this wasn't measured in this sample, personal accomplishment and emotional resilience are strong and significant predictors of career satisfaction and remain strong predictors after adjustment for both work and demographic

factors (Keeton et al., 2007). The strongest predictor of emotional resilience and personal accomplishment is control over work schedule and amount of hours worked (Keeton et al., 2007).

The correlation among EE and DP values were consistent with the findings of other published research (Taris, Le Blanc, Schaufeli, & Schreurs, 2005). High EE scores are associated with higher DP scores (Taris et al., 2005). The correlations among EE, DP, and PA showed a similar trend. High EE and high DP scores are normally associated with a low sense of personal accomplishment (Taris et al., 2005). However, high PA scores found in the sample population are outside of the published norm. Individuals who are burned out often have feelings of doubt in their work productivity and also exhibit a feeling of incompetence (Maslach et al., 2001). This did not appear to be representative in this sample of osteopathic physicians. OSU COM Alumni are experiencing high levels of burnout and yet maintain a high sense of personal accomplishment. This increased sense of accomplishment is a process of self-evaluation (Maslach et al., 1996). It is known among research that positive self-image has a positive effect on health and well-being (Mann, Hosman, Schaalma, & De Vries, 2004).

Response Strategies

The results from this study indicate that it is a public health priority to address burnout rates in physicians. The rates of burnout continue to rise among physicians in the United States (Shanafelt, Hasan, et al., 2015). Physician burnout can have substantial effects on the health care system such as exacerbating the nationwide shortage of physicians, decreasing patient care quality, and patient satisfaction. Breakdowns in the care continuum, specifically to physician shortages, will impact primary, secondary, and tertiary public health prevention models.

One promising solution may be incorporating wellness programming into medical education and residency training (Brolet & Rodgers, 2010; Pipas, 2017; Winters, 2016; Vassar, 2015). Although there are no outcome studies for these programs, some medical schools such as Vanderbilt, Dartmouth, Georgetown, Stanford, Louisville, Eastern Virginia, and others are making large strides in increasing efforts to pilot wellness programs focused on increasing

medical student wellness and preventing burnout. Vanderbilt's medical student wellness program is becoming the gold standard for modeling medical student wellness initiatives. Vanderbilt has broken up each year of medical school with a specific theme that specifically focuses on known stressors for that given year of training (Brolet & Rodgers, 2010). Dartmouth uses the quadruple aim of self-awareness, self-improvement, personal health and wellness (Pipas, 2017). In addition to the quadruple aim, Dartmouth also focuses on the importance of modeling self-care as a cultural norm (Pipas, 2017). Georgetown offers a program called Mind Body Medicine. Mind Body Medicine is a program that expresses the benefits and value of the mind and body working in harmony (Winters, 2016). Stanford has the Balance in Life Program. They focus on four domains: professional, physical, psychological, and social (Vassar, 2015). Stanford also offers mentorship, leadership trainings, and every six weeks the medical students are encouraged to check in with the campus counselor for a confidential counseling session (Vassar, 2015). Louisville offers a program called Happy Healers, Healthy Humans: A wellness curricular model as a means of effecting cultural change, reducing burnout and improving patient outcomes (Winters, 2016). This program focuses on goal setting, reflection, and cognitive behavioral therapy groups (2016). Eastern Virginia has created what's called, The Medical Education Manifesto: Training the physician change agent of tomorrow (2016). This program focuses on fostering idealism, humanism, gratitude, mindfulness, and reflection. Along with this, Eastern Virginia also has their CareForward Curriculum. CareForward helps the first year medical students learn emotional skills for the transition into medical school; teach them to monitor their sleep, nutrition, and exercise routines.

These programs are similar in aspects of pursuing a holistic approach to wellness. This stance includes not only physical and mental wellness opportunities, but they include programming focused on professional development, spiritual enlightenment, and building social support among peers. Based on previous research, this approach could be beneficial, but it is important to include an ecological approach to these initiatives. Preventing burnout only at the

individual level is known to have a low success rate; however, initiatives focused on both the individual level and organizational level yield higher success (Maslach et al., 2001).

Implications

Given the findings of this thesis study, it is apparent that burnout rates in osteopathic physicians must be addressed in order to provide a sufficient level of support to the Nation's public health workforce. Constructs from the Theory of Planned Behavior are shown to be effective in addressing physician burnout (Liljegren & Ekberg, 2009; Linzer et al., 2001; Maslach et al., 2001; Schaufeli et al., 2009; Shanafelt et al., 2009). These constructs include, but are not limited to perceived behavioral control, inhibiting and facilitating factors, perceived power, normative beliefs, and self-efficacy.

Linzer and colleagues discuss how an organization can address physician burnout. They suggest that in order to decrease burnout rates, physicians should have a high level of work control. Work control encompasses different inhibiting and facilitating factors that are associated with burnout, such as, job demands, job resources, job mobility, career fit, and autonomy (Liljegren & Ekberg, 2009; Linzer et al., 2001; Schaufeli et al., 2009). Physicians with low work control are known to have increased levels of burnout (Linzer et al., 2001). Increasing the level of control that a physician has over their practice could potentially decrease levels of burnout according to Linzer and colleagues' findings.

In order to influence these determinants of burnout, change is going to have to happen at both the individual and organizational level. Maslach and colleagues state that enhancing ones perceived power over how they interact in the workplace could be a step in the right direction (2001). Individual interventions that include developing effective coping skills, learning deep relaxation, and increasing internal resources are known to help increase one's self efficacy and perceived behavioral control over stressful situations in the workplace. It would also be beneficial to incorporate educational seminars on work-life balance. The inability to control work-life balance is known to be the strongest single predictor of burnout in physicians and thus

should be addressed immediately (Keeton et al., 2007). This can be done by social modeling to impact ones perceptions of the societal norms, increasing ones' perception of behavioral control, and addressing their attitude toward burnout to ensure physicians and organizations understand the importance of the issue at hand.

Dunn and colleagues expressed the same importance of work control, work order, and physician satisfaction with the clinical aspects of patient care (Dunn, Arnetz, Christensen, & Homer, 2007). Their intervention was designed to increase physician work control, improve order in clinic functioning, and increase personal work satisfaction. Throughout the process of their 5 year intervention, they saw a 19% increase in physician satisfaction and a decrease in emotional exhaustion by almost 21%. The success of this program can be attributed to addressing burnout with an ecological approach. There are three levels to which organizational change can occur. The first level is reduction of work constraints, second is prevention methods that increases a physician's ability to cope with stressful situations, and third is treatment or rehabilitation of employees who are showing signs of emotional exhaustion (Montgomery, Panagopoulou, Kehoe, & Valkanos, 2011). Doing these three steps, starting with leadership, will help engage these community leaders to start modeling the newly adopted behaviors, it will increase and it will provide the skills necessary to initiate organizational change (Montgomery et al., 2011).

It is important to understand how social interactions and environmental influence affects our personal health. Addressing physician duty hours, work control, stigma associated with mental health, and all of the other known correlations of burnout cannot be addressed only at the individual level. Physicians do not have control over having a supportive supervisor or how other individuals view their battle with stressful situations. Health professionals and health care administrators must view the increasing rates of physician burnout at the ecological level.

Conclusion

In summary, the present study determined burnout rates in osteopathic physicians and identified relationships between rates of burnout in osteopathic physicians and other variables including demographics and practice characteristics. This study also documented differences in burnout rates between osteopathic physicians (D.O.) surveyed from the current study and physician burnout rates reported in the published literature.

Additional research is needed in the area of burnout in osteopathic physicians. Specifically, additional research is needed to fully explore the relationship between burnout constructs (e.g., emotional exhaustion, depersonalization, and sense of personal accomplishment). These constructs are the foundation of burnout. Learning how they interact with different practice characteristics such as specialty, practice type, facility type, practice location, etc. will aid public health professionals on where to focus both preventative and treatment measures. Additionally, research needs to be initiated on outcome driven wellness programing with efforts at reducing burnout rates in physicians.

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APPENDICES

Appendix A: Scoring and Interpretation Key – MBI-HSS

Scoring & Interpretation Key – MBI-HSS

Instructions. For each column, transfer your response (0-6) from the original measure to the three columns below. Only transfer numbers to the unshaded/ungreyed spaces. Then, sum each column and place that number in the space provide below. This number represents your score for that dimension. Guidelines for interpretation can be found on the right side of the sheet.

Emotional Exhaustion	*Depersonalization*	*Professional Accomplishment*
How Often 0-6	**How Often 0-6**	**How Often 0-6**
1. _____	1. _____	1. _____
2. _____	2. _____	2. _____
3. _____	3. _____	3. _____
4. _____	4. _____	4. _____
5. _____	5. _____	5. _____
6. _____	6. _____	6. _____
7. _____	7. _____	7. _____
8. _____	8. _____	8. _____
9. _____	9. _____	9. _____
10. _____	10. _____	10. _____
11. _____	11. _____	11. _____
12. _____	12. _____	12. _____
13. _____	13. _____	13. _____
14. _____	14. _____	14. _____
15. _____	15. _____	15. _____
16. _____	16. _____	16. _____
17. _____	17. _____	17. _____
18. _____	18. _____	18. _____
19. _____	19. _____	19. _____
20. _____	20. _____	20. _____
21. _____	21. _____	21. _____
22. _____	22. _____	22. _____

Categorization: Emotional Exhaustion, Human Services & Educators Forms	
	Frequency
High	27 or over
Moderate	17-26
Low	0-16

Categorization: Depersonalization, Human Services Form	
	Frequency
High	13 or over
Moderate	7-12
Low	0-6

Categorization: Personal Accomplishment,* Human Services Form	
	Frequency
High	39 or over
Moderate	32-38
Low	0 - 31

EE Sum_____ Dep Sum_____ PA Sum_____

Appendix B: Burnout Rates in OSU – COM Alumni Survey

Oklahoma State University - College of Osteopathic Medicine

Informed Consent

You are invited to participate in a web-based online survey on physician burnout in OSU COM alumni. This is a research project being conducted by Jesse Chaffin, the Health and Wellness Manager at Oklahoma State University. It should take approximately 15 minutes to complete.

PARTICIPATION
Your participation in this survey is voluntary. You may refuse to take part in the research or exit the survey at any time without penalty.

BENEFITS
You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about the burnout rates in our physicians here at OSU COM.

RISKS
There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

CONFIDENTIALITY
Your survey answers will be sent to a link at SurveyMonkey.com where data will be stored in a password protected electronic format. Survey Monkey does not collect identifying information such as your name, email address, or IP address. Therefore, your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study.

CONTACT
If you have questions at any time about the study or the procedures, you may contact my research supervisor, Dr. Denna Wheeler via phone 918-584-4323 or via email at denna.wheeler@okstate.edu.

If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honored during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the investigator, you may contact the Oklahoma State University Center for Health Sciences Institutional Review Board Chairman at 918-561-8325.

1. ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking the "Agree" button indicates that:
- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

○ Agree

○ Disagree

1

Appendix B Continued

Oklahoma State University - College of Osteopathic Medicine

MBI - HSS

2. What year did you graduate medical school?

- ◯ <1980
- ◯ 1981 - 1990
- ◯ 1991 - 2000
- ◯ 2001 - 2010
- ◯ >2011

3. What term BEST describes your practice/facility?

- ◯ Solo Practitioner
- ◯ Partnership or Small Group Practice (single specialty)
- ◯ Large Group Practice (multiple specialty)
- ◯ Hospital
- ◯ ITU (Indian Health Service, Tribal Health, or Urban Indian Clinic
- ◯ Behavioral Health
- ◯ Locum Tenens
- ◯ Retired
- ◯ Administration
- ◯ Non-Clinical Work
- ◯ Veterans Administration
- ◯ Other (please specify)

2

Appendix B Continued

4. What is your primary clinical discipline or specialty (i.e., the discipline you utilize the most amount of time each week)

- ◯ Family Medicine
- ◯ Internal Medicine
- ◯ Pediatrics
- ◯ Obstetrics/Gynecology
- ◯ Emergency Medicine
- ◯ Surgery
- ◯ Cardiology
- ◯ Hematology/Oncology
- ◯ N/A
- ◯ Other (please specify)

5. How would you describe your practice/facility employment relationship?

- ◯ Physician Owned
- ◯ Health System Employed
- ◯ Federal Government Employed
- ◯ N/A
- ◯ Other (please specify)

6. Where is your practice located?

- ◯ Large Metro
- ◯ Small Metro/Suburban
- ◯ Small Town
- ◯ Rural

7. Please respond to the following questions and answer them to the best of your ability.

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
I feel emotionally drained from my work.	◯	◯	◯	◯	◯	◯	◯

3

Appendix B Continued

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
I feel used up at the end of the workday.	○	○	○	○	○	○	○
I feel fatigued when I get up in the morning and have to face another day on the job.	○	○	○	○	○	○	○
I can easily understand how my patients feel about things.	○	○	○	○	○	○	○
I feel I treat some patients as if they were impersonal objects.	○	○	○	○	○	○	○
Working with people all day is really a strain for me.	○	○	○	○	○	○	○
I deal very effectively with the problems of my patients.	○	○	○	○	○	○	○
I feel burned out from my work.	○	○	○	○	○	○	○
I feel I'm positively influencing other people's lives through my work.	○	○	○	○	○	○	○
I've become more callous toward people since I took this job.	○	○	○	○	○	○	○
I worry that this job is hardening me emotionally.	○	○	○	○	○	○	○
I feel very energetic.	○	○	○	○	○	○	○
I feel frustrated by my job.	○	○	○	○	○	○	○
I feel I'm working too hard on my job.	○	○	○	○	○	○	○
I don't really care what happens to some patients.	○	○	○	○	○	○	○
Working with people directly puts too much stress on me.	○	○	○	○	○	○	○
I can easily create a relaxed atmosphere with my patients.	○	○	○	○	○	○	○

4

Appendix B Continued

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
I feel exhilarated after working closely with my patients.	◯	◯	◯	◯	◯	◯	◯
I have accomplished many worthwhile things in this job.	◯	◯	◯	◯	◯	◯	◯
I fee like I'm at the end of my rope.	◯	◯	◯	◯	◯	◯	◯
In my work, I deal with emotional problems very calmly.	◯	◯	◯	◯	◯	◯	◯
I feel patients blame me for some of their problems.	◯	◯	◯	◯	◯	◯	◯

8. Gender

◯ M

◯ F

◯ Other

◯ Prefer not to answer

9. What is your age?

◯ <35

◯ 35 - 44

◯ 45 - 54

◯ 55 - 64

◯ 65+

Appendix B Continued

10. Race/Ethnicity

- White
- African American
- Hispanic
- Native American or Alaska Native
- Native Hawaiian or Pacific Islander
- Asian
- Other

Appendix C: OSU – CHS Institutional Review Board Acceptance

Center for Health Sciences

Institutional Review Board
FWA #00005037

July 3, 2018

PRINCIPAL INVESTIGATOR: Jesse Chaffin

IRB # 2018034

TITLED: Burnout Rates in OSU-COM Alumni

On behalf of the OSU-CHS Institutional Review Board (IRB), I reviewed your protocol entitled "Burnout Rates in OSU-COM Alumni" and determined it meets exempted criteria under federal guidelines, 45CFR 46.101(b)(2); therefore, you are free to begin the study.

As principal investigator of this protocol, it is your responsibility to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the university, or inspection by regulatory agencies.

When your study is completed, please notify the IRB.

Page 1 of 1

Office of Research &
Sponsored Programs
1111 West 17th Street
Tulsa, Oklahoma 74107
918-561-1400
https://health.okstate.edu

VITA

Jesse Chaffin

Candidate for the Degree of

Master of Public Health

Thesis: BURNOUT RATES IN OKLAHOMA STATE UNIVERSITY – COLLEGE OF OSTEOPATHIC MEDICINE ALUMNI

Major Field: Public Health

Biographical:

Education:

Completed the requirements for the Master of Public Health at Oklahoma State University, Stillwater, Oklahoma in July, 2018.

Completed the requirements for the Bachelor of Science in Health Education and Promotion at Oklahoma State University, Tulsa, Oklahoma in 2014.

Experience:

Wellness Intern at Oklahoma State University, Tulsa, Oklahoma from May to October 2014.

Health and Wellness Manager at Oklahoma State University Center for Health Sciences, Tulsa, Oklahoma from October 2014 to Present.

Professional Memberships:

Tulsa Area Wellness Forum
Wellness Council of America
American College of Health Association