Spiritual Direction Practice in Physician Associates

Nicholas Nielsen

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SPIRITUAL DIRECTION PRACTICE IN PHYSICIAN ASSOCIATES

A Thesis Presented to
The Faculty of the School of Medicine
Yale University

In Candidacy for the degree of
Master of Medical Science

July 2021

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Div
Class of 2021
Medicine &
Yale Physician Associate Program

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Pediatrics
Yale School of Medicine
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<td>Table 5</td>
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</table>
Abstract

Burnout affects nearly 50% of healthcare providers including physician associates throughout their professions. The extent of burnout experienced is directly related to the life satisfaction of these providers and to the level of care they provide their patients. One effective way to combat burnout is emotional intelligence practice, but there is little evidence to suggest that incorporating spiritual well-being can reduce burnout and improve life satisfaction in clinicians. In this study, we will assess the effect of spiritual guided practice on burnout and life satisfaction in physician associates. Using a non-blinded randomized control trial, we will select inpatient hospitalist physician associates from local tertiary hospitals and assign them to the intervention or control. This study may provide evidence for a novel way to combat burnout rates and life satisfaction in physician associates.
Chapter 1 - Introduction

1.1 Background

Burnout has been shown to be an ever-increasing concern in the healthcare workplace with the prevalence of burnout symptoms in both physicians in training, and practicing physicians nearing 50%. In the US, studies have similarly found that burnout rates are higher for practicing physicians than those working in other fields. In addition to this, studies have also linked physician burnout with a) suboptimal patient care b) doubled risk of medical error c) 17% increased odds of being named in a medical malpractice suit d) increased odds of reporting a major medical error in the subsequent 3 months e) substance abuse f) depression/suicidal ideation, and many more. Burnout has also been connected to several different aspects of the work-home life, with the two main contributors being hours worked and the presence of conflict between work and home. Burnout is quickly finding its place as a ‘red flag’ among healthcare agencies, requiring an organized institutional response.

Spiritual direction has been proposed as a method to decrease burnout as well as increase life satisfaction in healthcare providers. It is an important way to evaluate one’s emotional well-being as well as their relationship to a higher power. Spiritual direction has been a practice since ancient times finding its roots in Christendom with John the Evangelist in the 2nd-century, in Judaism among the mashpi’a, and even within sufism surrounding the murshid. Spiritual direction differs from psychological forms of counseling and is defined as “the practice of being with people as they attempt to deepen their relationship with the divine, or to learn and grow in their personal spirituality.” This spiritual direction can lead to a deeper understanding of oneself as well as the way
we perceive and act in the world. Taking advantage of this form of therapy could lead to promising results concerning burnout as well as life and job satisfaction.

Whether an individual’s spirituality is associated with an organized religious sect, through meditation, nature, or several other affiliations, it affects their personal perceptions and feelings about almost every aspect of their lives. Spirituality is defined as “sensitivity or attachment to religious values; the quality or state of being spiritual.”

Often a major contributor to one’s spirituality is their emotional intelligence (EI). A study by Sabanciogullari et al. determined that not only a relationship between emotion regulation and spiritual well-being exists, but that a training which included spirituality could show improvements in the EI level of healthcare workers (Table 1). Sabanciogullari et al. also found that the spirituality levels of nurses were above average, while physicians were only found to be on a moderate level. This higher level of spirituality among nurses has also been associated with an increased level of happiness among the profession. Nurses with high spirituality levels manage daily stressors better; in turn this increases the quality-of-care given to patients as well as the internal motivation nurses experience to continue working under difficult conditions.

Table 1: Comparison of Newly Graduated Nurses and Doctors

<table>
<thead>
<tr>
<th>Scales</th>
<th>Newly graduated nurses (n = 50)</th>
<th>Newly graduated doctors (n = 50)</th>
<th>Test t/p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Spirituality and Spiritual Care Rating Scale general</td>
<td>54.64</td>
<td>5.44</td>
<td>51.20</td>
</tr>
<tr>
<td>Spirituality and Spiritual Care Rating Scale sub-scale</td>
<td>25.10</td>
<td>4.06</td>
<td>23.84</td>
</tr>
<tr>
<td>Religiousness sub-scale</td>
<td>11.32</td>
<td>2.00</td>
<td>10.72</td>
</tr>
<tr>
<td>Personal care sub-scale</td>
<td>13.72</td>
<td>2.23</td>
<td>12.48</td>
</tr>
<tr>
<td>Schutte Emotional Intelligence Scale general</td>
<td>156.56</td>
<td>18.69</td>
<td>145.44</td>
</tr>
</tbody>
</table>
| Scales                                      | Newly graduated nurses 
\textit{(n = 50)} | Newly graduated doctors 
\textit{(n = 50)} | Test t/p |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Optimism/emotion regulation sub-scale</td>
<td>46.68</td>
<td>6.11</td>
<td>44.10</td>
</tr>
<tr>
<td>Benefiting from emotions sub-scale</td>
<td>22.64</td>
<td>3.49</td>
<td>21.52</td>
</tr>
<tr>
<td>Emotion expression sub-scale</td>
<td>38.02</td>
<td>5.56</td>
<td>34.60</td>
</tr>
</tbody>
</table>

Statistically significant values \( (p < 0.05) \) are given in bold.


Emotional Intelligence has been defined as “the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth.”EI can be thought of as a way for individuals to better cope with stressors and demands throughout their daily lives. In a study performed in 2017, high EI scores correlated with a decrease in burnout among general surgery residents. This research also concluded that the personal emotional intelligence levels of the residents remained the same throughout the study period. This suggests that if emotional intelligence is improved burnout rates among healthcare workers may decrease.

As spirituality has been shown to be an integral factor in emotional well-being and intelligence in healthcare workers, its inclusion in EI directed programs shows promise to provide synergism between the two. The difficulty arises when determining the qualifications of someone best suited to conduct a program as such. The profession of hospital chaplain in particular stands out as one who could lead a group based emotional intelligence program centered on the spirituality of the clinician. Hospital-based trauma chaplains undergo extensive training in providing emotional and spiritual support to patients and families in crises. This enables them to be effective role models for
healthcare providers who wish to strengthen their EI and interpersonal skills. In the case of the death of an ICU patient, family members were often more likely to be satisfied with their care if a pastor or spiritual care advisor was involved during the 24 hour period prior to the patient’s death.\textsuperscript{10} The potential correlation of increased patient satisfaction in end-of-life care with a chaplain led spirituality and EI program for providers is very compelling.

The cultivation of one’s emotional intelligence is a promising way to combat the rise in burnout as well as improve life and job satisfaction. This cultivation can be done in many ways. Several studies have attempted this through trainings on managing conflict and burnout, mindfulness meditation training and yoga, positive self-reinforcement training, group discussion, and even physical activity. Their findings advocate that cognitive, behavioral, and mindfulness focused intercession can reduce the symptoms of anxiety and burnout in physicians (Table 2).\textsuperscript{11}

\textit{Table 2: Meta-Analysis of Burnout and Stress in Physicians}

<table>
<thead>
<tr>
<th>Study name</th>
<th>Std diff in means</th>
<th>Std error</th>
<th>Standard error</th>
<th>Std error</th>
<th>Std error</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>Z-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goodman &amp; Schorling, 2012</td>
<td>-0.490</td>
<td>0.148</td>
<td>0.022</td>
<td>-0.780</td>
<td>-0.199</td>
<td>-3.304</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krasner et al., 2009</td>
<td>-0.368</td>
<td>0.123</td>
<td>0.015</td>
<td>-0.510</td>
<td>-0.126</td>
<td>-2.978</td>
<td>0.003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ro et al 2010 a</td>
<td>-0.290</td>
<td>0.088</td>
<td>0.008</td>
<td>-0.462</td>
<td>-0.117</td>
<td>-3.296</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ro et al 2010 b</td>
<td>-0.682</td>
<td>0.206</td>
<td>0.043</td>
<td>-1.086</td>
<td>-0.278</td>
<td>-3.399</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martins et al., 2011</td>
<td>-0.318</td>
<td>0.234</td>
<td>0.055</td>
<td>-0.777</td>
<td>0.140</td>
<td>-1.360</td>
<td>0.174</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.375</td>
<td>0.059</td>
<td>0.004</td>
<td>-0.491</td>
<td>-0.256</td>
<td>-6.294</td>
<td>0.000</td>
<td></td>
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</tr>
</tbody>
</table>

\textit{Meta-Analysis of Single Group Design Studies}
This meta-analysis of burnout studies among physicians demonstrated that a marked decrease in burnout and stress can be achieved through coaching programs designed to combat these issues. Notably, each intervention exhibited a significant decrease in both categories. This greatly highlights the need for an increase in similar interventions. Although the quantity of information pertaining to physician associates (PA) is low, it is useful to note that according to the AAPA and Medscape, 32.6% of physician associates, and 42% of physicians currently experience burnout.\textsuperscript{12,13} While there are several notable differences, this largely reflects the prevalence among physicians overall. This is further elucidated later in our review with the discussion of population methods.

Jonson et al. point out that a major reason individuals choose to work in healthcare professions is that they feel they are coming into the field “out of a sense of compassion for others.”\textsuperscript{14} These people make the mistake of believing that this sense of compassion is the only thing needed to connect with their patients and that they will be able to continue it throughout their careers.\textsuperscript{14} This can make it difficult to convince them
of the importance of cultivating EI. This demonstrates the need for increased research surrounding the cultivation of emotional intelligence and spirituality in clinicians. In their efforts towards staying up to date in their clinical trainings, as new literature is published surrounding this idea, clinicians may begin to see the importance of staying up to date in their own emotional well-being.

As clinicians become increasingly open to the idea of trainings surrounding emotional intelligence and spirituality, effective development programs must be established. Zeidner et al devised seven characteristics that these programs should contain to be successful: (a) a working definition of EI, as different interpretations would lead to different types of interventions; (b) clear objectives and outcome expectations; (c) clear identification of the educational context in which the program will take place; (d) full integration of the EI program into the curriculum, (e) work with EI in context that directly applies to the field; (f) development of staff involved in teaching; and (g) appropriate psychometrically sound evaluation of the EI program being implemented. These characteristics are similar to characteristics that make any program or training effective. It needs to be not only dynamic and pragmatic, but also clearly identify the context and target outcomes they hope to accomplish. As programs become more commonplace among institutions; providers will become increasingly open to participating, more institutions will become involved, burnout will decrease, and life and career satisfaction will increase.

There is a large amount of research surrounding the prevalence and consequences of burnout however, models of reducing burnout are seemingly lacking. We propose a yearlong spiritual direction practice to improve the emotional intelligence and burnout of
recent graduate physician associates in a hospitalist setting. This program will consist of monthly individual trainings, with group sessions every three months. The individual curriculum will have an emphasis on the personal spirituality of the physician associate and how they can use it to improve burnout. The group sessions will be focused on the book by the world-renowned neurologist and psychiatrist Viktor E. Frankl *Man’s Search for Meaning* and comparing how their fellow clinicians are applying this spiritual directed practice to their daily lives.

### 1.2 Problem Statement

One aspect of integrative healthcare that is often overlooked is the emotional intelligence and spirituality of the provider. Improved EI is associated with lower burnout and improved job satisfaction among providers and also provides the opportunity for increased caring from the provider towards the patient.\(^\text{16}\) This has been shown throughout many studies over the last forty years. Current literature surrounding emotional intelligence and burnout that includes physicians and nurses can be easily found. However, there exists a major lack of research surrounding this idea associated with physician associates. As PAs become ever more important and commonplace in the healthcare world the need for academia surrounding the profession increases.

The physician associate training is based on a general practice model. This model, like many others, has slowly been integrating emotional intelligence and spirituality into their curricula in an effort to not only improve the job satisfaction of these providers, but also in the attempt to help them become more aware of their emotional well-being. As classes of newly trained healthcare providers graduate and enter the medical field,
employers and researchers are beginning to notice that the training focused on these aspects of care are still lacking.⁶

We hope that employers and healthcare institutions will see this study as a framework for what they can potentially do in their respective practices. The research that we will conduct will furnish a potential program that hospital systems, clinics, and academic institutions may follow to more effectively train their clinicians. These programs may then lead to more opportunities for increased literature surrounding the aspect of spirituality in providers, which will continue to aid healthcare professionals as they strive for improvement in every facet of their personal and patient care.

1.3 Goals and Objectives

The goal of this study will be to determine if a year-long spiritually directed practice led by hospital chaplains will efficiently improve the emotional intelligence, spirituality, and life/job satisfaction of physician associates, while concurrently decreasing burnout. We hope that as this study would provide a model for other institutions to implement either this curriculum or a locally adapted version to address the job/life satisfaction and burnout of all providers.

Objectives:

a) To improve burnout in physician associates

b) To increase spiritual and emotional awareness among physician associates

c) To improve job/life satisfaction secondary to the program

d) To illustrate the need, and positive effects, of increased emotional and spiritual training among clinicians
1.4 Hypothesis

We hypothesize that among the 40 physician associates who complete the intervention throughout the year-long spiritual directed practice program, we will see a statistically significant difference in mean change in burnout at 3-month intervals, as well as in life satisfaction and EI at the close (12 months) of the program, as compared to the control.

1.5 Definitions

Emotional Intelligence - The capacity to be aware of, control, and express one's emotions, and to handle interpersonal relationships judiciously and empathetically.\textsuperscript{17}

Spiritual Directed Practice – The practice of being with people as they attempt to deepen their relationship with the divine, or to learn and grow in their personal spirituality.\textsuperscript{4}

Burnout – Exhaustion of physical or emotional strength or motivation usually as a result of prolonged stress or frustration.\textsuperscript{18}

Life Satisfaction – The extent to which a person finds life rich, meaningful, full, or of high quality.\textsuperscript{19}
1.6 References:

Chapter 2 – Review of Literature

2.1 Introduction – Literature Search Criteria

Employing the following databases in December 2020, May and July 2021, Pubmed, Ovid, Embase, APA PsycINFO, NCBI, Google Scholar, the following terms were searched, “Maslach Burnout Inventory, Schute Self Report Emotional Intelligence Test, Satisfaction with Life Scale, burnout, spirituality, meditation, gratitude, journaling, physician associate, nurse, physician, life satisfaction, gratitude, meditation, patient safety, job turnover, blinding.” Synonyms included, “compassion fatigue, quality of life, personal satisfaction, mindfulness-based stress reduction, clinician, healthcare provider, burnout psychological, burnout epidemiology. Solely articles written or available in English were constituted. RCTs, systematic reviews, observational studies, and pre-test post-test studies were included – preference was made towards including RCTs, systematic reviews, and meta-analyses when available. Of the 69 included articles, 82% were published within the last 10 years.

2.2 Overview of Burnout, Life Satisfaction, and Emotional Intelligence in Healthcare Providers

Information is seemingly lacking pertaining specifically to physician associates and burnout. This can be interpreted many ways; however, it is the author’s opinion that this absence of data in our source population only illustrates the need for large, well-funded studies and reviews. It is evident that burnout exists among essentially every workforce throughout the world. A study published in 2015 compared the rate of burnout and satisfaction among US physicians with that of the general population. Findings were concerning for an increase in report of symptoms of burnout among physicians from
45.5% in 2011 to 54.4% in 2014 (P<0.001); with low to no change among the general population within the same period. With assessment using the Maslach Burnout Inventory (MBI), they additionally saw that 46.9% of surveyed physicians experienced high emotional exhaustion, 34.6% high depersonalization, and 16.3% had a low sense of personal accomplishment – with 59.9% of physicians feeling that their work life balance was inadequate. Moreover, while adjusting for age, sex, relationship status, and work hours per week, they showed a consistent increase in risk of burnout among physicians over the 3 years (odds ratio, 1.97; 95% CI, 1.80-2.16; P<.001) and decreased likelihood of satisfaction with work life balance (odds ratio, 0.68; 95% CI, 0.62-0.75; P<.001) when compared to the general working population.¹

A pilot study performed in Germany among family caregivers of advanced cancer patients greatly illustrates the need, and lack of, burnout vs. life satisfaction improvement programs. Through their program they found that 43% of their providers reported moderate or severe anxiety, and 41% reported moderate to severe depression, with anxiety being especially higher in providers as compared to the general German population.² Furthermore, a review published in the Journal of Palliative Medicine reported that approximately 50% of general family caregivers are below population norms on physical health, with rates of depression and anxiety upwards of 44%.³ With 24% of family practice providers estimated to be PAs, it is likely that among the family caregivers surveyed in the previous studies, a number of them were physician associates.

Furthermore, in a study assessing the emotional intelligence of, and its variations in surgical residents, it was found that residents responses to surveys showed emotional exhaustion in 62%, depersonalization in 73%, and only 37% saw personal achievement
(Pearson correlation coefficient of 0.606 and 0.616, p 0.017 and 0.015, respectively). Of note, the residents were given the Maslach Burnout Inventory 3 consecutive times, and among those that completed, all saw improvement in scores among all categories without any intervention.\(^4\) They continued to note that an estimated 69% of residents experience burnout and this continues to rise. This data alone illustrates the increasing need for emotional intelligence cultivating programs with the intent to decrease burnout and increase life satisfaction among healthcare providers.

To further delineate the state of these three aspects of work-life balance, a cohort was published in JAMA Psychiatry describing the severe consequences of ignoring the above characteristics. They compared deaths related to drugs, alcohol, and suicide among US healthcare professionals between those who attended weekly religious services and those who did not. They found that those who attended a service exhibited a 68% lower hazard of death from despair in the Nurses Health Study II and a 38% lower hazard in the Health Professionals Follow-Up Study (HR, 0.32; 95% CI, 0.16-0.62; HR, 0.67; 95% CI, 0.48-0.94 respectively).\(^5\) It can be argued that the attendance of a religious service weekly is comparable with an emotional intelligence/burnout intervention program; as similar services tend to focus their teachings around positivity, regulation of emotions, and personal connections as well as connection to a higher power. The results described above also serve to improve the consideration to use chaplains as the instructors in a program focused on burnout and emotional intelligence.
2.3 Confounders and Sources of Bias

Sources of bias and the presence of confounders in research is inevitable. There are many methods authors can use to reduce artifact they create in data; however it is relatively impossible to control for all possible sources. As behavioral research is concerned, it is this author’s opinion that such things become more difficult to control as blinding becomes more difficult and characteristics of your population become more inherent.

The idea that this study is not blinded in any form raises concern for several biases, notably information bias of the participant associated with the knowledge of whether they are receiving the intervention or not, as well as information bias among the investigators measuring the outcomes. Interestingly, a meta-epidemiological study with a purported analysis of 142 meta-analyses, including 1153 trials, reported no evidence for an average difference in estimated treatment effect between blinded vs. non-blinded trials (Table 3). However, they do continue to recommend that blinding be performed whenever possible.  

Table 3: Meta-Analysis of Blinded vs Non-Blinded Trials

<table>
<thead>
<tr>
<th>Trial group (No of contributing meta-analyses, contributing trials)</th>
<th>Ratio of odds ratios (95% credible interval)</th>
<th>Ratio of odds ratios (95% credible interval)</th>
<th>Increase in standard deviation between trials</th>
<th>Standard deviation between meta-analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Patients - patient reported outcomes (18, 132)</td>
<td>0.91 (0.61 to 1.34) 0.22 0.20</td>
<td>0.96 (0.69 to 1.39) 0.10 0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Patients - blinded observer reported outcomes (14, 95)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) Healthcare providers - healthcare provider decision outcomes (29, 173)</td>
<td>1.01 (0.84 to 1.19) 0.06 0.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Healthcare providers - outcomes assessed by blinded observers/patients (13, 91)</td>
<td>0.97 (0.64 to 1.45) 0.10 0.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) Outcome assessor - subjective outcomes (46, 397)</td>
<td>1.01 (0.86 to 1.18) 0.05 0.09</td>
<td></td>
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</tr>
<tr>
<td>Low (15, 155)</td>
<td>0.94 (0.71 to 1.21)</td>
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<td></td>
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<tr>
<td>Moderate (23, 165)</td>
<td>1.05 (0.83 to 1.38)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (3, 77)</td>
<td>1.10 (0.75 to 1.63)</td>
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</table>

Additionally, bias may also occur within the diversity of our sample. If the population of inpatient PAs in the Yale Healthcare system correspond to national diversity data, it may be more difficult to include non-white physician associates. Based on data from the US Bureau of Labor and Statistics, only 12% and 17% of the physician associate workforce is made up of those with Black or Hispanic backgrounds respectively. This is further exacerbated by the matriculation rate of non-white PA students, with only 25% of student bodies being made up of non-white persons in 2016-2017. However, this may be accounted for through the intention to include equal representation of races in our study as those represented in the population.

Potential bias may also be considered as the subjects included in our sample will likely come from various religious backgrounds. As previously discussed, it has been shown that clinicians that attend weekly religious services have a decreased risk of death due to drugs, alcohol, or suicide. This likely correlates to the burnout and level of life satisfaction these clinicians were experiencing. Furthermore, as our curriculum leans heavily on programs and ideas associated with religiosity (meditation, prayer, etc.), previous experience with religion among each individual PA included in the study may affect various outcomes. Lowicki et Zajenkowski describe this idea and observe that religiosity alone correlates with a general increase in emotional intelligence and coping skills, as well as a negative correlation with EI among those with negative religious coping skills. Justly, we can estimate a presumed effect on whether the clinician has had a positive, or negative, involvement with religion. Unfortunately, concern for lack of generalizability from their cohorts is present, as the study was solely conducted in
Sweden, and only Christian religions were accounted for. We hope to be able to account for artifact from previous religious experience by matching religious and a-religious participants with their respective counterparts across the intervention and control arms of our trial.

Further, there are several potential confounders we anticipate and need to account for. Firstly, as previously stated, a large contributor to clinicians’ burnout and low satisfaction with life is their perceived work-life balance.\textsuperscript{1,9} We estimate that this work-life balance may be perceived differently among physician associates who work part-time or as needed versus those who are employed full-time. This may be further exacerbated among those who also pick up “moonlight” shifts. In an effort to attempt to avoid this confounding variable, we will only include those who work full-time, and do not pick up additional shifts, in our program.

An additional potential confounder that may be considered is the clinician’s relationship and perceived recovery with their family after work. One study performed in Nigeria correlated an increased recovery and negative relationship with burnout in African cultures among those with larger families, and greater perceived family cohesion.\textsuperscript{10} However, this is in direct contrast to a study performed among western cultures that concluded that an increase in number of children may be associated with additional stressors and at times do not provide necessary fulfillment.\textsuperscript{11} Furthermore, they observed that all 4 of their assessed issues (sex, finance, division of labor, and raising children) were related to perceived marital problems. It is possible that these perceived family-life interactions may likely contribute to an increase or decrease – depending on positive
versus negative perception – in each of our three assessed variables. This is difficult to control for and may need to be attempted in further studies.

2.4 Review of Relevant Methodology

2.4.1 Review of Scales and Measurements

Three self-assessment tools have been selected to quantify the change in each of our desired outcomes. Firstly, the primary outcome will be the mean change in burnout among the physician associates, which is to be measured using the Maslach Burnout Inventory (MBI).\(^2\) The MBI is considered to be the measure of choice by experts in the field for self-reported assessment of burnout. It was originally created by Christina Maslach in 1981 out of the University of California at Berkeley. It is currently on its third edition and has been subdivided into inventories specific to educators, human services, and a general survey. The survey we will be using is the Maslach Burnout Inventory – Human Services Survey (MBI – HSS).\(^2\) This scale is designed to assess 22 items across three components of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Each item is written as a statement considering personal feelings or attitudes towards something and are answered based on the frequency with which the person experiences those feelings assessed on a 7-point likert scale (from every day to never).\(^2\)

Scores among the three subscales are summed and measured separately. Higher scores in the Emotional Exhaustion and Depersonalization scales are associated with higher degrees of burnout, lower scores within the Personal Accomplishment scale are associated with a higher degree of burnout. Scoring is conducted using a key which is
specific for each subscale. Each score is considered separately and not combined into a
total score and may be divided into low, average, or high burnout based on the key or
considered as a raw score. The manual also recommends that respondents not be
informed that this scale determines level of burnout as this may lead to a reactive effect
on the scores; we expect to use this strategy among our participants.

Internal consistency of the scale has been evaluated using Cronbach’s coefficient
alpha with the reliability coefficients being: 0.90, 0.79, and 0.71 (all P < 0.001) for
Emotional Exhaustion, Depersonalization, and Personal accomplishment respectively.
Additional studies have observed the subscales to be stable over time, showing
correlations ranging from 0.50 to 0.82. It is thought that this stability causes the scale to
become insensitive to minor fluctuations in burnout and may cause difficulty in
determining relationships over time. Although the MBI cannot be used as a diagnostic
tool, it is effective as a personal assessment tool.\textsuperscript{12}

Secondly, to effectively measure the emotional intelligence levels of each
participant, we will be using the Schute Self-Report Emotional Intelligence Scale
(SSEIT).\textsuperscript{13} This is a free scale that consists of a 33-item emotional intelligence scale
using four sub-scales: emotion perception, utilizing emotions, managing self-relevant
emotions, and managing others’ emotions. Responses are given on a scale of 1 (strongly
agree) to 5 (strongly disagree. The scale was initially designed as a 62-item analysis with
creation of the 33-item scale after their first analysis; and was shown to correlate well
with related standard constructs of the time. Six additional trials were performed to assess
the reliability and validity of the scale. Internal consistency showed a Cronbach’s alpha
of 0.87, and a two-week retest validity of 0.078. Additionally, a predictive validity trial
was performed based on the theory that emotional intelligence plays an important role in determining how successful a person is after they enter into a setting as stated in Daniel Goleman’s book *Emotional Intelligence*. This trial observed that scores on the SSEIT completed at the start of the academic year predicted grade point average at the end of the year with $P < 0.01$.

Although validity has been established several times, a concern does still arise from the initial six studies performed by Schute et. al. The majority of the validity tests were performed solely on college age students. This may be concerning pertaining to the generalizability of the scale. However, it must be noted that the primary trial detailing the creation of the scale as well as initial validity was performed on a more diverse population from a variety of settings in the southeastern United States. It must also be noted that this initial trial consisted of 218 women and 111 men. However, this gender bias is reconciled through the additional 5 validation studies performed with relatively equal shares of male vs female participants. Thus, the scale has been shown to be generalizable across various populations.

Lastly, we have chosen to use the Satisfaction with Life Scale (SWLS) to measure life satisfaction. This scale has existed for well over 30 years and has been cited over 30,000 times and has emerged as the standard assessment for life satisfaction. The scale began as a list of 48 self-reported items and through subsequent studies became a 5 item self-reported list with each item given a rating from 1 (strongly disagree) to 7 (strongly agree). The values are then summed with a possible max score of 35, a higher score correlating to a greater feeling of life satisfaction. A second study was performed which provided a score of 0.02 on the Marlowe-Crowne measure which indicated that the
SWLS does not evoke a social desirability response. The data observed at the conclusion of this trial also affirmed that people who are satisfied with their lives are generally more well-adjusted, and free from psychopathology. Furthermore, a third study was performed to compare the SWLS with trained life satisfaction interviewing. Data of the interviewers correlated and were summed to create a life satisfaction composite judgement. Each individual statement in the SWLS then correlated at 0.81, 0.63, 0.61, 0.75, and 0.66 showing a good internal consistency of the scale.

While these studies accounted for gender and profession bias based on sampling, the data is not particularly generalizable. The study populations mainly consisted of samples of students or geriatrics and did not attempt to include people in a larger age range or in other areas of life. This lack of generalizability is amended with further stability and sensitivity observed through auxiliary studies. Pavot and Diener performed a large systematic review in which they established normative data as well as further validity for the SWLS (Table 4). They were able to ascertain a degree of temporal stability of 0.54 after 4 years and observed that the scale is sensitive enough to be valuable in the detection of life satisfaction in a clinical setting. They further concluded that the SWLS is informative when used in conjunction with other scales that focus on emotional well-being.
While the above three scales have been shown to have consistent internal and external validity, stability, sensitivity, and generalizability through several decades of use, there still exists shortfalls inherent in their designs. Firstly, as all three are self-reported instruments they have the possibility of being consciously manipulated. Scores may also fluctuate based on current mood, circumstances surrounding the administration of the scales, or to what conditions in their life the respondents are comparing themselves.

Despite these issues, we believe that these three well described scales will complement each other and allow for a greater picture of burnout and life satisfaction among our study population.
2.4.2 Review of Curriculum

Gratitude and meditation have been mainstays of emotional and spiritual regulation for thousands of years. As one integrates these practices into their lives, they expect to see a gradual improvement in their emotional well-being and connection to the world around them.

Gratitude

Emmons and McCullough performed a multi-site randomized controlled trial showing the benefits of gratitude. They observed that those allocated to their gratitude condition had a higher mean gratitude score and lower negative affect, which correlated to a higher positive affect, than those assigned to the hassles condition - given instruction to reflect only on hassles or irritants that annoy or bother the person. Additionally, they saw an increase in sleep among those participating in the gratitude condition.17 Furthermore, Marcus Shaker suggests that Appreciative Inquiry (AI), a mechanism for decision making through gratitude, can help clinicians combat burnout.18 Using gratitude as a positive psychology approach to well-being has also been shown to decrease depressive symptoms among those involved according to a meta-analysis conducted in 2013.19 This analysis went further and found that longer interventions observed greater results. However, minimal work surrounding this has been performed in a clinical setting.

The approach to gratitude in our curriculum will consist of a lecture on gratitude given by the chaplain. The participant will then be asked to keep a journal, making entries at least three times a week, including a list of 3 things they are grateful for. This model follows a qualitative analysis performed among healthcare professionals employed in neonatal ICU’s. Rippstein-leuenberger et al. found that as workers kept this journal,
three main themes emerged: Having a good day at work, having supportive relationships, and making meaningful use of self-determined care. Moreover, they extrapolate that healthcare workers have difficulty focusing on self-care and downplay its importance.\textsuperscript{20}

We hope to overcome this stipulation by providing an easily accessible, non-time consuming, program for clinicians to use to their advantage.

Many studies have been performed observing the positive impacts of journaling. A recent pilot study performed on nurses showed significant differences in stress, burnout, communication, and situation monitoring among those who completed daily, 5-minute journal entries.\textsuperscript{21} An additional study was conducted that found similar results with statistically significant improvements in compassion satisfaction and burnout.\textsuperscript{22} It is of note that these studies are limited by their sample as they only include nurses and nursing aids and show a selection bias towards women. However, journaling has been suggested as an effective way to improve these outcomes in medical school students and residents\textsuperscript{23} and the lack of studies performed on other populations only strengthens the need for a study such as ours.

\textit{Mindfulness Meditation}

Our curriculum seeks to further the improvements seen among those who utilize gratitude and journaling strategies by additionally including meditation instruction and practice. Two systematic reviews from Aryankhesal et al. and Zhang et al. measuring the effects of interventions on change in burnout among physicians and nurses, noted that the treatment for burnout should be done through the combination of methods.\textsuperscript{24,25} They further noted that studies using psychiatric interventions such as meditation mindfulness interventions lead to increased self-care and reduced emotional exhaustion and burnout.
However, this review is limited as it primarily included publications originating from Middle Eastern countries. Therefore, it is not entirely generalizable as their culture varies greatly from that of western society.24

Romani and Ashkar note that mindful meditation can be used as a complementary therapy. It has reduced negative stress and extraneous factors that end in burnout.26 Krasner et al. further elucidate this in their pre-post study where they noted a statistically significant improvement in mindfulness (raw score change [Δ], 8.9; 95% confidence interval [CI], 7.0 to 10.8), burnout (emotional exhaustion Δ = −6.8; 95% CI, -4.8 to -8.8, depersonalization Δ = −2.5; 95% CI, -1.4 to -3.6, and personal accomplishment Δ = 2.4; 95% CI, 1.2 to 3.6), and emotional stability (Δ = 0.5; 95% CI, 0.3 to 0.7). However, they do note that their study is limited as it is a before-and-after study and suggest that RCTs be performed on a larger sample of practicing clinicians.27 An additional study from Ospina-Kammerer and Figley showed a burnout benefit through the use of the Respiratory One Method, a form of meditation. Using the emotional exhaustion subscale of the MBI they were able to see a statistically significant decrease in emotional exhaustion among participants in their intervention (−2.71 versus 3.8, $P < .05$).28

As the length of time for burnout and mindfulness interventions performed in most available studies were less than 6 months, it has been suggested that further study is required with longer interventions available.24,25 With our curriculum is expected to be 12 months long, we hope to see an additive effect on our participants. Along with this, we hope to effectively use both group and individual sessions to deliver the curriculum. Justly, group sessions led by professional peers have shown the effectiveness of this type of intervention. Satterfield and Becerra found that burnout scores among the participants
in their support group-based program significantly decreased over the 2-year period of their study. They also observed that the residents involved in their intervention saw peer relationships as the most critical source of support throughout their postgraduate training. A cluster RCT conducted on nurses in Japan also found that group sessions improved the psychosocial aspects of the work environment and solidified peer-to-peer relationships, however it did not see a significant effect on emotional health. Though the study performed by Uchiyama did not report a significant effect on emotional health, the change in the psychosocial aspects of the work environment are important. It can be argued that the improvement in peer-to-peer relationships in these studies may assist in the reduction of burnout and improvement in both emotional intelligence and life satisfaction. It is also of note that neither of the aforementioned studies include physician associates. This further strengthens the argument that additional studies including these clinicians are warranted.

Mindfulness meditation has several forms. In particular, we utilize 4 separate interventions in our curriculum that find their basis in this form of meditation. Firstly, Lectio Divina. Lectio Divina is a form of prayer that finds it roots in the 12th century and consists of 5 steps: 1) reading (lectio), 2) meditation (meditatio), 3) prayer (oratio), 4) contemplation (contemplation), 5) action (actio) (appendix E). Secondly, an additional form of prayer to be used is the Examen Prayer. This form originates in the 16th century and is again divided into 5 steps: 1) prepare your heart and mind, 2) review the day with gratitude, 3) pay attention to your emotions, 4) select a part of your day to meditate over, 5) meditate on tomorrow (appendix F). To avoid bias towards those experienced with these prayers, instead of asking participants to use scripture, Mary Oliver poetry will be
used for reflection (appendix I). Participants may then meditate towards the spirituality they are most comfortable with, rather than a specific divine being.

Complementary to the previous two forms of prayer, mantra (or transcendental) and loving-kindness meditation are also included in the curriculum. Mantra is a Sanskrit term meaning “mind release”. In mantra meditation the individual uses a single syllable, word, or phrase to be repeated throughout the session, attempting to clear their minds and focus on self and surroundings (appendix H). Potential effectiveness of this form of meditation has been observed multiple times, most recently in a small cohort of emergency department providers.\(^{33}\) Lastly, In loving-kindness meditation the individual calls to mind a person and silently repeats phrases that invoke positive feelings (may you be healthy, may you be successful, etc.). As the participant becomes more experienced, they may expand this to include themselves as well as others who may have hurt them or caused hardship (appendix G). It is useful to note that a recent an RCT showed non-inferiority of this form of meditation on veterans experiencing PTSD when compared with cognitive processing therapy.\(^{34}\)
2.5 References


Chapter 3 - Study Methods

3.1 Study Design

We will be performing a randomized control trial using intention to treat protocol. As this study includes an intervention that does not allow for a disguised placebo, blinding will not be performed. 40 participants will be selected and divided evenly at random into either the control or intervention arm of the study.

3.2 Study Population and Sampling

The population of our study will be drawn from three local tertiary hospitals in the Yale New Haven Health System: Yale New Haven Hospital York Street Campus, Yale New Haven Hospital Saint Raphael Campus, and Yale New Haven Health Bridgeport Hospital. We will recruit individuals actively working as inpatient physician associate hospitalists using a simple random sampling method. Participants will be contacted via email provided by the healthcare administration system. We will then use a computer-generated list for a random selection of participants among those who agreed to participate in the study.

Eligible individuals will be required to have actively worked in the inpatient hospitalist setting for at least 2 years, be above the age of 25, and have between 5 to 9 years of experience.\(^1,2\) Those selected to participate among the pool of physician associates in the age range will also be subject to a preliminary assessment through the Maslach Burnout Inventory – Human Services Survey. Those who are considered low on either of the three scales included in the MBI-HSS will be excluded from the study.\(^3\)
Additionally, those who have possible confounding neurological disorders (GAD, depression, stroke, brain injury, etc.) will also not be included in the study.

3.3 Recruitment

Subjects will be recruited from the overall population of inpatient physician associate practitioners from the aforementioned hospitals. Flyers, emails, and other forms of broad communication will be employed to contact prospective physician associate participants. Hospital chaplains from each hospital will be recruited through personal contact methods and will be assigned to work with providers originating from their hospital of employ. We estimate that recruitment will take one month with an additional 3 months required for curriculum training for the chaplains.

After a sufficient number of responses have been received, a simple random sample will be chosen through a computer-generated list and participants will be matched based on religious background and distributed into the intervention or control arm of the study. 40 participants will be selected overall with 20 randomized to the intervention arm and the remaining 20 randomized to the control arm. We will ensure that the two arms will be similar in age, gender, race, work experience, burnout scores, and life/job satisfaction.

Participation is voluntary. All comments made and data collected throughout the trial will be considered confidential.
3.4 Study Variables and Measures

The primary independent variable in our study will be the intervention performed. This being the chaplain guided monthly individual, and quarterly group, spirituality practice sessions. The non-intervention arm will receive a flyer about mental health services available to physician associates, but no direct support or intervention.

The particular dependent variables we will be assessing are the burnout, emotional intelligence, and life satisfaction of each participant included in our trial, irrespective of placement. These will be measured using previously validated scales (MBI-HSS, SWLS, SSEIT), and will be further assessed for comparison using a paired t-test. Life satisfaction and emotional intelligence will be measured at the start and end of the curriculum, while burnout will be assessed quarterly.

3.5 Adherence

Adherence among the intervention group will be measured by roll taken during each three-month group session and reporting of individual session attendance by the chaplains. Adherence among the control group will be measured through a survey emailed monthly to each participant asking if they read the material provided for the month.

This is an intention to treat study. All data collected from the participants will be included in analysis, regardless of adherence.
3.6 Monitoring of adverse events

No adverse events are expected to occur during the active phase of our study. However, it is possible that as providers attend our program, they may want to be formally evaluated by a mental health professional for diseases such as depression or anxiety. If this occurs and they are in turn diagnosed with a disease that would have originally excluded them from the study, they will be removed from the trial and recommended to continue following treatment with their provider.

3.7 Data Collection

At the onset of the program an initial evaluation will be performed to establish a baseline for each individual. We will assess rates of burnout among all participants using the MBI-HSS, as well as their emotional intelligence level using the Schutte Self-Report Emotional Intelligence Test (SSEIT) and their life satisfaction using the Satisfaction with Life Scale (SWLS). Afterward burnout will be assessed every three months using the Maslach burnout scale. This will be given during the group sessions in the intervention and emailed to those in the control. Following the 12-month program, all participants will again self-report their burnout, emotional intelligence, and life satisfaction levels using the 3 scales previously stated. To reduce the ‘survey burnout’ participants may feel, we have chosen to only assess EI and life satisfaction pre and post program as they are not the primary outcome observed.

Surveys will be blinded and anonymous. All data collected will be stored in a password protected database only accessible by the primary investigators.
3.8 Sample Size Calculation

A randomized controlled trial using a coaching method to improve both burnout and emotional exhaustion found that after 5 months absolute rates of burnout had decreased by 17.1% among the intervention group.\textsuperscript{4} To compensate for the large decrease seen in Drybye et al, as well as an effect size of 22%; we calculated a minimum sample size of 40 participants using a 2-tailed $\alpha$ of 0.05 to reject the null-hypothesis with a power of 90%. This allows us to see a statistical mean change in burnout as low as 5.5%. (appendix D)

As a sample size of 20 allows us to see a mean change equal to that of Drybye et al; our increase in sample size to 40 will also minimize the effects of dropout, non-adherence, and loss due to the exclusion criteria. According to two previous studies performed, this loss can be estimated to be between 5 and 17%.\textsuperscript{5,6} We expect to minimize this loss through monthly personal invitations and reminders from the chaplains to their respective students, as well as allowing participants to follow their own personal progress through the use of our self-reported scales and journaling.

Unfortunately, of the studies cited above, only one may include physician associates. In order to more effectively compare the populations, we noted that according to the AAPA and Medscape; 32.6% of physician associates, and 42% of physicians currently experience burnout. This shows that there is a 9.4% decreased rate of burnout among physician associates as compared to physicians.\textsuperscript{2,7}
3.9 Analysis

Data will be analyzed per intention to treat protocol. This protocol will allow us to best assess the responses collected from each participant, regardless of individual completion of the study.

Each of the three scales will be measured based on the scoring keys provided for them. Additionally, as each can arguably be measured using a continuous scale, they will be individually measured using a paired-t-test method.

3.10 Timeline and Resources:

Initial recruitment of chaplains will begin on Jan. 3, 2022 with curriculum training beginning on Feb. 1, 2022 with one training a month, the last session being on April 1, 2022. Recruitment of physician associates will begin on March 1, 2022 with conclusion, matching, and group assignment being performed through April 2022.

Oversight personnel and equipment required:

- 4 Chaplains among the three hospitals
- 1 secretary for data entry as it is collected
- 1 statistician to measure and report results
- Scheduled Zoom meetings or office space that allows for social distancing (based on current hospital direction) and use of a projection screen for trainings
- Reading material for control group as well as additional resources for intervention arm (printing capabilities, etc.)
- *Man’s Search for Meaning* by Viktor E. Frankl with Foreword by Harold S. Kushner to be provided to each participant
3.11 Curriculum

Pre-curriculum inclusion criteria:
Participant must:
- Be full-time employed with no additional shifts
- Have worked in hospitalist setting for at least 2 years
- Have 5 to 9 years of previous clinical experience
- Show active burnout as assessed in pre-curriculum MBI-HSS

Month 1 - individual
- Program expectations/introduction – 15 mins
- Introduce *Man’s Search for Meaning* – 20 mins
- Meditation and journaling overview – 25 mins
- Assignment:
  - Journal at least 3 times a week
  - Read Foreward by Herald S. Kushner by month 3
  - Write thoughts down in journal

Month 2 - individual
- Discuss one journal entry from previous month – 10 mins
- Lecture on Gratefulness – 40 minutes
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry (focus on gratitude and self-reflection through 12-month program)

Month 3 - group
- Overview of group session expectations – 10 mins
- Discuss Foreward by Herald S. Kushner from *Man’s Search for Meaning* – 30 mins
- Complete Maslach Burnout Inventory – 15 mins
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
  - Meditate at least 1 time a week
  - Read chapter 1 – Experiences in a Concentration Camp before next group session
    - Write thoughts in journal

Month 4 – individual
- Discuss one journal entry from previous 2 months – 10 mins
- Mantra Meditation overview and practice – 30 mins
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
- Meditate for 20 mins at least once a week

Month 5 - individual
- Discuss one journal entry from previous month – 10 mins
- Introduce Examen Prayer, how to secularize and use in medical practice – 20 mins
- Introduce Loving – kindness meditation – 20 mins
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
  - Choice of meditation at least once a week

Month 6 – group
- Discuss chapter 1 – Experiences in a concentration camp – 45 mins
- Maslach Burnout Inventory – 15 mins
- Assignment
  - Read Chapter 2 – Logotherapy in a Nutshell before next group session
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
  - Choice of meditation at least once a week

Month 7 – individual
- Walking meditation – one-hour hike of chaplain’s choice
- Discuss journal entries from last 2 months while on hike
- Discuss feelings that arise throughout hike
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
  - Choice of meditation at least once a week

Month 8 – individual
- Discuss 1 journal entry from previous month – 10 mins
- Practice Loving – kindness meditation – 20 mins
- Introduce secularized Lectio Divina and how to apply to medical practice – 30 mins
  - The Summer Day by Mary Oliver
- Assignment
  - Journal at least 3 times a week, list 3 things you are grateful for in each entry
  - Choice of meditation at least once a week

Month 9 – group
- Discuss Chapter 2 – Logotherapy in a nutshell – 45 mins
- Maslach Burnout Inventory – 15 mins
Assignment
  o Read 1984 postscript – The Case for a Tragic Optimism before next group session
  o Journal at least 3 times a week, list 3 things you are grateful for in each entry
  o Choice of meditation at least once a week

Month 10 - individual
  • Discuss at least one journal entry – 10 mins
  • Practice Mantra Meditation – 20 mins
  • Lecture on Forgiveness – 30 mins
  • Assignment
    o Journal at least 3 times a week, list 3 things you are grateful for in each entry
    o Choice of meditation at least once a week

Month 11 – individual
  • Discuss at least one journal entry – 10 mins
  • Practice Lectio-Divina – 20 minutes
    o Wild Geese by Mary Oliver
  • Discuss Gratefulness – 30 mins
  • Assignment
    o Journal at least 3 times a week, list 3 things you are grateful for in each entry
    o Choice of meditation at least once a week

Month 12 – group
  • Discuss 1984 postscript – The Case for a Tragic Optimism – 30 mins
  • Concluding discussion on progression throughout program – 30 minutes
  • Assignment
    o Complete final self-reported scales to be emailed within the month
3.12 References


Chapter 4 – Conclusion

4.1 Advantages and Disadvantages

This study aims to reduce the amount of burnout, while also improving the life satisfaction and emotional intelligence, in physician associates. These aspects of a clinician’s career are becoming increasingly recognized as primordial in the development of successful providers in their work and social environments. Through the program we have created, we hope to not only provide our participants with the tools to do so, but to also provide a framework on which other programs may be built.

Many things throughout the literature show the importance of combatting burnout in clinicians, however, one thing stands out starkly among the data: Shanafelt et al. were able to determine that a 1-point increase in the depersonalization or emotional exhaustion subscales of the MBI correlated with a 5% to 11% increased risk for a major medical error in surgeons (Table 5).\(^1\) If no other evidence existed showing the gravity of addressing burnout, this should be enough. It illustrates the potential to improve the quality-of-care healthcare systems can offer patients when implementing programs such as ours.

The themes raised in our proposed program have shown great import regarding burnout and life satisfaction in clinicians.\(^2\)\(^-\)\(^5\) As a multifactorial approach such as ours is implemented throughout various healthcare systems we would expect to see dramatic changes and improvements throughout many aspects of healthcare. In addition, programs similar to ours should come at minimal to no cost of the system implementing them. The majority of hospital systems in the United States already have access to chaplains well trained in clinical pastoral education and are familiar with the various forms of
meditation, journaling, and gratitude included in our curriculum. A great deal of freedom may also be given to these coaches as they work to improve the lives of the clinicians they work with. Equally, only one of our chosen scales is not open source or free. The main expected cost of the program are the creation and distribution of the materials required.

**Table 5: Relationship of Burnout, Quality of Life, and Depression with Medical Error**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Metric (Scale)*</th>
<th>Odds Ratio (95% CI)$^1$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burnout</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional exhaustion$^2$</td>
<td>MBI-EE (0–54)</td>
<td>1.048 (1.042–1.055)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Depersonalization$^2$</td>
<td>MBI-DP (0–33)</td>
<td>1.109 (1.096–1.122)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Personal accomplishment$^6$</td>
<td>MBI-PA (0–48)</td>
<td>0.965 (0.955–0.975)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>QOL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental QOL</td>
<td>SF-12 (0–100)</td>
<td>0.943 (0.936–0.949)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Physical QOL</td>
<td>SF-12 (0–100)</td>
<td>1.008 (0.996–1.021)</td>
<td>0.178</td>
</tr>
<tr>
<td>Depression</td>
<td>Screen positive for depression, %</td>
<td>3.212 (2.742–3.761)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Table indicates how a 1 unit difference in each distress metric relates to likelihood of reporting a major medical error in the previous 3 month (ie, evaluates how being distressed may relate to the odds of reporting an error). For depression, results indicate how screening positive for symptoms of depression relates to the likelihood of reporting a major medical error in the previous 3 months as compared to those who screen negative.

*MBI-EE indicates Maslach Burnout Inventory-Emotional Exhaustion; MBI-DP, Maslach Burnout Inventory-Depersonalization; MBI-PA, Maslach Burnout Inventory-Personal Accomplishment; SF-12, Medical Outcomes Study 12-item Short Form.

$^1$Odds ratio of self-reported error in the following 3 months associated with a 1 unit increase in each distress metric.

$^2$Higher score indicates greater degree of burnout.

$^6$Higher score indicates lower degree of burnout.


In addition to being low cost, it is likely that the healthcare institutions involved will save money on recruiting and new employee orientation programs. The cost of turnover in nurses has been estimated to be between $22,000 and $64,000 per nurse, with some studies indicating the cost to be double the nurse’s salary, with the total cost to the US healthcare system ranging from $5.9 to $6.4 million. This cost is greatly increased among physicians. The American Academy of Family Physicians estimates the cost of replacement and recruiting one family physician to be near $250,000. The AMA also estimates that at one prominent healthcare institution the cost of recruitment per
physician ranges from $250,000 to $1 million depending on the specialty, with the estimated 2 year economic loss being between $15.5 to $55.5 million dollars if a doctor was to leave due to burnout.\textsuperscript{8} As the previously cited articles pertaining to physicians are not peer-reviewed, bias and data imperfections are likely increased; however they do paint a concerning picture surrounding the costs of recruitment, financial loss, and on-boarding for these healthcare institutions. Little to no data exists surrounding this subject among physician associates, however it can be inferred that the financial strain is somewhere between physicians and nurses. As institutions implement programs to decrease burnout among their providers, they will likely see decreased costs of recruitment, which may correlate to a decrease in healthcare cost to the consumer, as well as decreased financial burden on said organizations.

The apparent positives inherent in a program such as this are evident, however, there exist several limitations on our program; first of which is the generalizability. As our program will only include physician associates from 3 local hospitals in southeastern Connecticut, it becomes difficult to interpret our data when referring to other types of providers as well as when applying it to other areas if the world. It has previously been stated that the rate of burnout among physician associates is 9.4\% lower than that of physicians across all specialties\textsuperscript{9}. Yet, it may be argued that we can compare this to general pediatrics as burnout rates among physicians in this specialty is near 35\%.\textsuperscript{10}

It can also be argued that as our program is considerably longer than the majority of coaching curricula previously studied, we may see higher rates of dropout or non-compliance among our participants. This is a concern that we hope to address by doubling the number of participants from the minimum as calculated in our sample size.
Further, we believe this is a required risk as it has been recommended that longer, multifactorial studies should be performed.\(^\text{11}\)

Moreover, as our measurements of outcome are self-reported, there already exists an inherent bias. We are unable to accurately measure the disposition of the individual as they complete the scales provided. Although the three scales we have chosen (MBI-HSS, SWLS, and SSREIT) have been in use for several decades and have shown considerable internal and external validity, there is still a concern of manipulation (intentional or unintentional) from the participant. We hope to minimize this bias through our non-intervention arm as this cohort of physician associates will be completing the surveys without receiving any intervention.

Our program also does not directly measure the effects of the participants family life, a hostile work environment, poor performance, or comorbidities the participants may be experiencing. These confounders have been suggested as possible problems when assessing burnout and life satisfaction, however they may be controlled through the use of multivariate regression analysis.\(^\text{12}\)

### 4.2 Clinical Significance

Burnout is a significant issue among healthcare providers throughout the world. It has been implicated in the increased risk of patient safety incidents (OR, 1.96; 95% CI, 1.59-2.40), lower quality of care (OR, 2.31; 95% CI, 1.87-2.85), and even depression.\(^\text{1,13-16}\) However, as burnout is a multi-faceted problem, it may be difficult to find effective ways to combat. Our proposed chaplain lead, spiritual directed practice is one of many
possibilities in this regard. Furthermore, increased burnout has been associated with a lower satisfaction with life and increased job turnover among healthcare workers.¹⁷-¹⁹

On many occasions it has been suggested that a multi-pronged emotional intelligence approach to combatting burnout has not only improved these aspects of provider’s lives, but also improved patient outcomes and care.¹⁴,¹⁵ We hope that through our emotional intelligence based spiritual directed practice we will see improvements in quality of life and emotional intelligence that will equally correlate to improved rates of burnout.

The methods we have selected to follow have been effectively observed on several occasions and we expect to see results that will lead to improved clinical outcomes not only for the physician associates involved, but also for patients treated by these clinicians. Further, we hope that our program can serve as an example that other healthcare systems can follow in their efforts to stave off the rising tide of burnout and its malodorous effects on clinicians throughout the world.
4.3 References


Appendices

Appendix A. Maslach Burnout Inventory - HSS

Unable to provide full scale items due to copyright and licensure restrictions. Scale details given and assessed in Chapter 3.
Appendix B. Satisfaction with Life Scale

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Slightly Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In most ways my life is close to my ideal.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. The conditions of my life are excellent.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3. I am satisfied with my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4. So far I have gotten the important things I want in life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5. If I could live my life over, I would change almost nothing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Appendix C. Schutte Self Report Emotional Intelligence Scale

The Schutte Self Report Emotional Intelligence Test (SSEIT)

Instructions: Indicate the extent to which each item applies to you using the following scale:

1 - strongly disagree
2 - disagree
3 - neither disagree nor agree
4 - agree
5 - strongly agree

<table>
<thead>
<tr>
<th>NO.</th>
<th>QUESTION</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I know when to speak about my personal problems to others</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2.</td>
<td>When I am faced with obstacles, I remember times I faced similar obstacles and overcame them</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3.</td>
<td>I expect that I will do well on most things I try</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4.</td>
<td>Other people find it easy to confide in me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5.</td>
<td>I find it hard to understand the non-verbal messages of other people</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6.</td>
<td>Some of the major events of my life have led me to re-evaluate what is important and not important</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7.</td>
<td>When my mood changes, I see new possibilities</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8.</td>
<td>Emotions are one of the things that make my life worth living</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9.</td>
<td>I am aware of my emotions as I experience them</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10.</td>
<td>I expect good things to happen</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11.</td>
<td>I like to share my emotions with others</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12.</td>
<td>When I experience a positive emotion, I know how to make it last</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13.</td>
<td>I arrange events others enjoy</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14.</td>
<td>I seek out activities that make me happy</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>15.</td>
<td>I am aware of the non-verbal messages I send to others</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>16.</td>
<td>I present myself in a way that makes a good impression on others</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>17.</td>
<td>When I am in a positive mood, solving problems is easy for me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>18.</td>
<td>By looking at their facial expressions, I recognize the emotions people are experiencing</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>19.</td>
<td>I know why my emotions change</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>20.</td>
<td>When I am in a positive mood, I am able to come up with new ideas</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>21.</td>
<td>I have control over my emotions</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>22.</td>
<td>I easily recognize my emotions as I experience them</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>23.</td>
<td>I motivate myself by imagining a good outcome to tasks I take on</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>24.</td>
<td>I compliment others when they have done something well</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>25.</td>
<td>I am aware of the non-verbal messages other people send</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>26.</td>
<td>When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>27.</td>
<td>When I feel a change in emotions, I tend to come up with new ideas</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Appendix D. Sample Size and Power Calculation

For the given effect size (population means of 23.5 vs. 18.0, 10 (9.2), sample sizes (20 and 20), and alpha (0.05), 2-tailed), power is 0.903.

This means that 90% of studies would be expected to yield a significant effect, rejecting the null hypothesis that the two population means are equal.

For the given effect size (population means of 23.5 vs. 18.0, 10 (9.2), sample sizes (20 and 10), and alpha (0.05), 2-tailed), power is 1.000.

This means that close to 100% of studies would be expected to yield a significant effect, rejecting the null hypothesis that the two population means are equal.
Appendix E. Lectio Divina

Appendix F. Examen Prayer

https://www.ignatianspirituality.com/examen-prayer-card/
Appendix G. Loving Kindness Meditation

How To Practice Loving-Kindness Meditation

Set aside time. Pick a specific time during the day to dedicate to this practice.

Find a comfortable position. Close your eyes, relax your muscles, and breathe.

Focus on a feeling of inner love and kindness. Thank yourself for all that you do.

Repeat three or four positive phrases to yourself. May I be happy. May I be safe. May I be mindful.

Focus on your close circle, then acquaintances, then the world. Feel gratitude and love for all people.

Open your eyes. Carry this feeling with you. As you go about your day, keep the feeling of love on the top of your mind.

Appendix H. Mantra Meditation

Appendix I. Mary Oliver Poetry

The Summer Day

Who made the world?
Who made the swan, and the black bear?
Who made the grasshopper?
This grasshopper, I mean—
the one who has flung herself out of the grass,
the one who is eating sugar out of my hand,
who is moving her jaws back and forth instead of up and down—
who is gazing around with her enormous and complicated eyes.
Now she lifts her pale forearms and thoroughly washes her face.
Now she snaps her wings open, and floats away.
I don't know exactly what a prayer is.
I do know how to pay attention, how to fall down
into the grass, how to kneel down in the grass,
how to be idle and blessed, how to stroll through the fields,
which is what I have been doing all day.
Tell me, what else should I have done?
Doesn't everything die at last, and too soon?
Tell me, what is it you plan to do
with your one wild and precious life?

-Mary Oliver

Wild Geese

You do not have to be good.
You do not have to walk on your knees
for a hundred miles through the desert, repenting.
You only have to let the soft animal of your body
love what it loves.
Tell me about despair, yours, and I will tell you mine.
Meanwhile the world goes on.
Meanwhile the sun and the clear pebbles of the rain
are moving across the landscapes,
over the prairies and the deep trees,
the mountains and the rivers.
Meanwhile the wild geese, high in the clean blue air,
are heading home again.
Whoever you are, no matter how lonely,
the world offers itself to your imagination,
calls to you like the wild geese, harsh and exciting—
over and over announcing your place
in the family of things.

-Mary Oliver

http://www.phys.unm.edu/~tw/fas/yits/archive/oliver_wildgeese.html
Bibliography


