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Building a Resilient Workforce: Programming for Commercial Content Moderation Staff

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BUILDING A RESILIENT WORKFORCE: PROGRAMMING FOR COMMERCIAL CONTENT MODERATION STAFF

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Abstract

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Commercial content moderators (CCM) review and remove controversial content from social media platforms, leading to potentially adverse mental health effects through secondary trauma exposure. Due to the problematic nature of their work, a U.S. based company hired mental health clinicians to design and instruct a resiliency program, developed based upon the psychological resilience literature. Regrettably, there is scarce peer-reviewed literature providing guidelines for best practices in program development or evaluations specific to this population to evaluate the program's effectiveness. Therefore, this study investigated whether the resiliency program provided to CCM workers predicted resilience and well-being outcomes by use of the 10-item Connor-Davidson Resilience Scale (CD-RISC 10) and the Professional Quality of Life Scale (ProQOL) when compared to a control group. Furthermore, whether increases in the frequency of attendance by mandating weekly training would increase resilience and well-being. The analyses consisted of two historical data sets with 497 teammates in data set one and 361 in data set two. Results found significant predictors for resilience when comparing subjects offered training to those withheld from instruction. The employee's age was found to predict resilience and well-being, increasing as subjects age. Lamentably, across all analyses, small effect sizes

were found, indicating that additional factors were stronger predictors in the variation of scores. Results of the CD-RISC 10 and the ProQOL found no significant differences between periods before and following mandated attendance, aligning with prior research that increased training does not correlate within increased well-being or resilience.

Keywords: Psychological resilience, resilience programming, well-being, stress disorders, secondary exposure, social media

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Chapter 1

Rationale and Justification of the Study

Mental health clinicians have an opportunity to assist workplace environments by providing resiliency programming in the form of preventative and reactive care to reduce occupational stress (Steiger et al., 2020). Sustained stress in a work context can lead to increased susceptibility to burnout, compassion fatigue, and secondary traumatic stress. Current research informs that occupational stress correlates to the aforementioned, including depression and anxiety, based upon an individual's appraisal of their stressors (Rees et al., 2015). As recent as 2012, studies have found that work-related stress has risen by 40% since 2007, with absenteeism rates escalating by 25%, primarily attributed to mental illness (Houdmont et al., 2012; Joyce et al., 2018). Though occupational stress can occur in any work environment, employment requiring prolonged exposure to disturbing or traumatic content, such as commercial content moderation (CCM) work, places individuals at a heightened risk of mental health susceptibility (Wohn, 2019). Reviewing content that could closely resemble prior trauma occurrences further elevates this risk (Rees et al., 2015).

In an attempt to preserve the sanctity of the internet, tech companies and social media entities employ CCM staff to screen and remove controversial content that violates the terms of the platform or places others at risk by passive exposure. Regrettably, their job tasks require persistent exposure to violent and exploitative material, calling for immediate intervention (Roberts, 2019). Prior literature informs an increased risk of an emotional arousal state and alterations to the perception of safety following continuous exposure to traumatic events. This information indicates a need for researchers to focus on emotional regulation, mindfulness, and stress reduction techniques to moderate the risk of adverse or long-term effects of exposure to

violent and exploitative content in the workplace (Newton, 2019; Biruski et al., 2014).

Companies invest heavily in reducing stressors associated with the CCM environment and tasks required by increasing employee resiliency through onsite or online training platforms led by mental health clinicians. Resiliency programs focus on coping, learned optimism, internal locus of control, emotional intelligence, and post-traumatic growth (Seibert, 2004). These programs allow employees to learn the necessary skills to manage stress and alter the perception of threats persistently presented in the workplace. Although literature exists to support the effectiveness of workplace well-being and resiliency interventions, most are limited in clarity regarding methodology, a justification for their adopted measurement, and an absence of an empirically validated framework (Leppin et al., 2014; Robertson et al., 2015). This lack of operationalization and transparency calls for further evaluation of resilience programming's effectiveness and whether newly structured programs aimed to assist CCM staff can differ.

Problem Statement

As of a 2019 report, 2.95 billion people globally utilize social media, and by 2023 the numbers are projected to increase to 3.43 billion. Growth in the United States is mainly driven by mobile devices' ease and accessibility, leading to 69% of the US population accessing and posting information on social media. While most information read and shared by the average users generally appears benign by social standards, a subset of the broader community develops and disseminates unsuitable content (Clement, 2019).

To provide an overview, Kristie Canegallo, Vice President for Trust and Safety for Google, reported that in 2017, Google's teams removed 2.3 billion ads and blocked 79 million ads that either broke the platform's policies or were identified as malware-laden sites. Furthermore, the team removed 38,000 posts of hate speech and 160,000 posts of violent

extremism content. She reported that Youtube removed 7 million videos and blocked 224 million comments (Canegallo, 2019). Finally, Facebook stated in one quarter of 2018; the company removed 837 million pieces of the material identified as spam, 21 million pieces of material depicting adult nudity, 3.5 million containing violent content, and 2.5 million containing hate speech (Rosen, 2018). In an attempt to preserve the sanctity of the internet, tech companies and social media entities employ CCM staff to screen and remove controversial content that violates the terms of the platform or places others at risk by passive exposure (Rosen, 2018).

CCM staff consists of reviewers involved in screening user-generated content or responses and deciphering whether the content fits within the platform's rules and regulations (Roberts, 2016). Moderators examine images, videos, and text flagged as inappropriate or disturbing, and remove content from the platform. The material can include petty scams, child sexual abuse material (CSAM), hate speech, depictions of graphic violence, images of adult nudity and sexual activity, terrorist propaganda, and fake accounts (Canegallo, 2019; Rosen, 2018). Materials, such as child exploitation posts, seem obvious for removal, however, the concept of merely selecting "delete" inadequately represents the full scope of the worker's role because the job requirements of the CCM worker are multifaceted. (Roberts, 2018). Roberts (2018) explained how complexities that include "human cognitive functions (e.g., linguistic and cultural competencies; quick recognition and application of appropriate policies; recognition of symbols or latent meanings)" are necessary for a CCM worker. At times, workers mistake their social norms and beliefs as justification for the removal of content, which may or may not be in accordance with the country’s policies or the platform's guidelines, and infringe on freedom of speech (Roberts, 2018; Rosen, 2018). Reviewing requires informed knowledge of social and cultural norms, governmental regulations that define hate speech, and what classifies it as racist

or slanderous, based upon platform policies (Roberts, 2016). Along with the rigorous demands of ensuring the removal of inappropriate material according to platform and governance, workers must also meet stringent accuracy and efficiency scores (Roberts, 2018).

Due to the capricious nature of their work, moderators have an increased risk of developing secondary traumatic stress, depression, and PTSD, according to news journalists Roberts (2018) and Newton (2020). One social media entity, Facebook, recently settled a $52 million lawsuit with over 11,000 employees following disclosure of adverse effects from viewing images while working without adequate mental health services to assist in the alleviation of symptoms. Roughly half stated they met full diagnostic criteria for post-traumatic stress disorder (PTSD) due to their work (Newton, 2020). For this reason, Roberts (2018), Newton (2020), and Parks (2019) call for action related to developing more relevant and robust intervention strategies. No published studies measuring resilience training's mediating effects related to content moderators have been conducted to date.

While the study of content moderation remains relatively new territory within the research forum, there exist studies of fields with similar responsibilities such as child exploitation investigators (Bourke & Craun, 2014), and news reporters who examine raw material submitted for review for safety or broadcast (Feinstein et al., 2014). Studies of these professions found that, with persistent exposure over time, workers experienced symptoms of "insomnia, stress, depression, weight gain, problems with sexual intimacy and marital relationships, and problems at work, such as anger and decreased productivity" (Bourke & Craun, 2014, p. 589), along with an altered perception of safety (Feinstein, Audet, & Waknine, 2014). These findings showcase the necessity to identify practical and efficient clinical interventions to diminish the risk of adverse long-term effects of this type of work previously

addressed by journalists and columnists (Roberts, 2016; Roberts, 2018; Newton, 2019; Parks, 2019).

Statement of Purpose

This quantitative, correlational study aimed to examine the effectiveness of a resiliency program from a provider of content moderation services based in the United States that employs CCM staff by accessing secondary data. The resilience training program was developed based upon program recommendations from Ijntema, Burger, and Schaufeli (2019), Robertson et al. (2015), Joyce et al. (2018), and Leppin et al. (2014). However, the current program differentiated from established literature by providing ongoing support during the employee's lifespan through weekly individual counseling support or group skills development classes. For transparency, the recommendations of Robertson et al. (2015), Joyce et al. (2018), and Leppin et al. (2014) are detailed in the following sections.

Clearly Defined Constructs

In an attempt to develop an effective resilience training program, Robertson et al. (2015) recommend first providing a guiding definition of resilience, for which there are multiple definitions. Furthermore, Ijntema et al. (2019) emphasize the importance of limiting the scope to psychological resilience by omitting physical and biological factors. Robertson et al. (2015) address inconsistencies with Carr et al. and Grant et al. by stating how the articles identified resilience as their primary focus; however, they utilized hardiness measurements instead. Similarly, Joyce et al. (2018) advised against using measurements of constructs related to resilience versus a formal assessment that directly measures resilience. Specifying the definition of resilience guides the researcher in choosing the most appropriate measurement to reflect the intended construct of interest accurately.

The company's program provides a precise definition by appointing psychological resilience as the relevant construct. Psychological resilience encompasses the program's intention to focus on preventative measures that protect against CCM work stressors' potential negative impacts (Fletcher & Sarkar, 2012). In turn, psychological resilience informs the company of the most relevant and valid measures of resilience; these include the Connor-Davidson Resilience Scale and the Professional Quality of Life Scale (Hudnall-Stamm, 2010; Connor & Davidson, 2003).

Define the Theoretical Framework

According to Leppin et al. (2014), programs that lacked conceptual models by using broad approaches were less effective than those with resilience-specific models and established theoretical frameworks, such as the five C's of resilience, the resilience model, and Lazarus' stress model. For this reason, the company's resiliency program evaluated within the current study chose to use the occupational health and safety model as a framework, which is a theoretically supported model (Baker et al., 1996). Furthermore, treatment interventions included dialectical behavioral therapy (DBT) since employees within content moderation can exhibit emotionally heightened reactions due to exposure to the material. DBT is an approved method for increasing an individual's resilience through psychological skill acquisition targeted at diminishing emotional arousal. The theory primarily relies on

> "shifting the attention of short-term impulsive reactions to long-term goals, from emotion-focused coping to cognitive-focused coping, from the internal focus of attention to an external focus of attention (increasing the value and utility of contextual interpretation of cues for responding), and from the rigid application of problem-solving strategies to more flexible ones" (Gow & Celinski, 2011, p. 432).

DBT requires the facilitator to identify the conflict, validate concerns, and discuss future change strategies. This form of intervention legitimizes feelings and informs the purpose of the emotions while acknowledging that feelings might limit a person's ability to view the larger picture or develop a resolution (Gow & Celinski, 2011).

Program Implementation

Robertson et al. (2015) reported that the most common format for program length includes 10 to 11-week training periods. However, when comparing studies, found no additional benefits to lengthening the span of a program. Jennings et al. (2013) conducted a 30-hour program that yielded significant improvements; however, similar findings were reported for Sood et al. (2011) when leading a short 90-minute session for physicians. The improvements found within both studies advise researchers that a program's determined length depends on a company's ability to allocate time for employee participation. The current study's workplace allows for weekly designated interventions that span the employee's lifetime. As time restrictions do not factor into the present study, what remains more relevant is that the program's treatment design be well-suited to the population of interest.

The most beneficial effects occurred in programs that offered group and individual training, such as Grant et al. (2009), Jennings et al. (2013), and Sood et al. (2011); however, limited evidence exists to support the necessity to provide individualized care. Robertson et al. (2015) advised the inclusion of individual programming as complementary to group training until further evidence concludes group alone is substantial. The company's program design promotes the workplace resilience model by providing a primary care level through weekly scheduled group intervention, with secondary care utilizing individual counseling, available as needed (Rees et al., 2015).

When providing services to employees, a logical question arises of whether care can be outsourced to an offsite employee assistance program (EAP) or facilitated by internal workplace EAP services. Both onsite and offsite programs within the Sharar et al. (2013) study were just as effective, with no significant differences between them. The authors discuss the added benefits and drawbacks of providing internal workplace EAP services; however, preface that internal and external programs must provide services that “range from simple assessment, referral, and follow-up to more extensive short-term counseling or psychotherapeutic treatment of employees" (paras. 1).

Mental health counselors benefit by working on location for two important reasons. First, clinicians are immersed within the company culture, allowing for increased insights into workplace stressors or problematic procedural issues affecting the employees. Secondly, greater collaboration from managers and the Human Resources department led to more intervention and care opportunities. Drawbacks involve the employer's limited capacity to provide confidential space, the extra layer of self-awareness required for onsite counselors to ensure a neutral stance across departments, and that counselors are mindful to avoid developing dual relationships with employees (Sharar et al., 2013).

The current company under review chose to provide treatment onsite to manage mandated groups and ensure employees obtain the skills necessary to manage their work environment. Robertson et al. 's (2015) meta-analysis identifies concerns related to training compliance when interventions are the employee’s responsibility. When fidelity of a program is left up to the participants, accountability is limited, leading to a lack of improvement within the employee’s mental health than a control group (Abbott et al., 2009). The current study assessed

differences between groups that included a quarter before the policy change and the next quarter after the mandate to test the aforementioned theory.

Rationale of the Study

The results of this study not only inform the general population about the benefits of utilizing mental health professionals to develop resilience programs that serve a unique population but also advise the mental health field on how to create an effective resilience program for CCM staff. To date, other companies that employ content moderators in this space have developed programs more closely resembling traditional corporate wellness programs (R. Lutz-Guevara, personal communication, May 15, 2020). Instead, CCM workers can benefit from developing skills associated with bolstering resilience to manage their work's problematic nature. The purpose of this study was to identify and examine the effectiveness of a resilience training program within the content moderation population and assess whether the program aligns with established protocols within current literature (Joyce et al., 2018; Leppin et al., 2014; Robertson et al., 2015).

Presently, CCM staff is exposed to controversial content for the majority of their workday due to the limitations of artificial intelligence (AI), which places workers at an increased risk of secondary traumatic stress and post-traumatic stress disorder (Newton, 2020; Robertson, 2018; Rosen, 2018; Ghosh et al., 2011). Robertson (2018) denotes that companies generally limit support by only providing individualized care at the tertiary level for CCM staff, which hinders the process and identification of resilient skills necessary to effectively manage their environment. The current structure places responsibility on the employee to identify their mental health decompensation and seek out help from mental health professionals, while cultural barriers and limited privacy accommodations onsite present an additional obstacle (Roberts,

2018). Evidence suggests the necessity to move from tertiary to primary or secondary care interventions as more companies implement resiliency training programs within new hire classes and continue through their work lifespan (Newton, 2019; Barrett, 2020). The trends by these companies to develop resiliency training at multiple phases of employment (Newton, 2019) sits in stark contrast to established resilience programs that offer education for a limited number of hours, days, or weeks (Leppin et al., 2014; Robertson et al., 2015). To ensure the resilience program's design and facilitation assists content moderators adequately, it is necessary to conduct a program evaluation to determine effectiveness.

Conceptual Framework & Model

To assess the effectiveness of a provider of content moderation services' resiliency program, the researcher chose the Workforce Resilience Model to guide the evaluation of its efficacy. The WRM was derived from the biopsychosocial model of emotional functioning and integrated conceptually distinct psychosocial factors: mindfulness, self-efficacy, & coping with neuroticism's biological vulnerability and explains how they determine an individual's psychological resilience. This model then ascertains that an individual's psychological resilience level regulates whether workplace stressors result in unfavorable outcomes, including; burnout, compassion fatigue, anxiety, or depression (Rees et al., 2015).

Workforce Resilience Model

Rees et al. (2015) developed the workplace resilience model because there was limited theoretical support for psychological resilience within current programs or workplace interventions. The authors called attention to using a multi-level perspective instead of differentiating psychological resilience and associated psychological variables by creating a testable model. Their model is derived from the biopsychosocial model of emotional functioning

and attempts to integrate conceptually distinct psychosocial factors that include mindfulness, self-efficacy, and coping with neuroticism's biological vulnerability. The authors address the overlap of the constructs and how they relate to psychological resilience (Rees et al., 2015).

An individual's level of psychological resilience is "a major determinant of whether or not certain unfavorable outcomes such as burnout, compassion fatigue, anxiety, or depression ensue," according to Rees et al. (2015) and how individuals respond to workplace stressors. The model first discusses the trait of neuroticism as a moderator variable. Neuroticism determines whether the individual has a predisposition for heightened emotional reactivity, negatively correlating with psychological resilience, meaning that, regardless of factors associated with psychological resilience, adjustment can be hindered (Rees et al., 2015). The trait of neuroticism was relevant to CCM work because employees with more indicators of neuroticism are at higher risk of reacting to graphic content and may be more susceptible to developing symptoms associated with depression and anxiety.

Factors identified as bolstering psychological resilience include mindfulness, self-efficacy, and positive coping. Mindfulness is the employee's psychological awareness. Individuals with limited ability to critically examine and reflect on what is occurring are less likely to detach from their stressors and become emotionally overwhelmed. Conversely, those who utilize mindfulness skills are more likely to think through resolutions that relieve their stressors. Self-efficacy and coping determine whether individuals believe they can alter or manage their current situations and move forward. Individuals low in self-efficacy pose a higher risk of choosing maladaptive, passive coping, such as avoidance or substance use. Alternatively, those with high self-efficacy presume command over the situation and choose active coping

strategies like "social support, problem-solving, and the use of cognitive-reappraisal" (Rees et al., 2015).

The final component of the model consists of psychological adjustment or the outcome of the interaction between factors that increase psychological resilience and the mediating effect of neuroticism. Rees et al. (2015) suggested measuring "symptoms of stress, depression, anxiety, burnout, and compassion fatigue" and resilience. Furthermore, the authors recommend the use of the Connor Davidson Resilience Scale (CD-RISC) to measure resilience due to its sound and effective psychometric properties. The authors proposed an inverse relationship between psychological adjustment and neuroticism, with direct positive correlations between psychological change and mindfulness, self-efficacy, and coping (Rees et al., 2015).

Research Questions

(1) Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STSS), and compassion fatigue found between CCM workers offered the resiliency program than those not offered the program?

(2) Controlling for age and gender, do resilience scores and well-being-- compassion satisfaction, low burnout, and low STS-- scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary?

Limitations

The researcher was limited in the accessibility of the participants' exact ages since the demographics related to age were gathered by category versus continuous. Therefore, when conducting statistical analysis, the variable will be an interval instead of continuous. The inability to evaluate by specific age restricts the researcher from identifying potential critical age

differences related to resiliency and well-being when running post hoc analysis. Furthermore, data provided to the researcher consists of various business lines that require employees to assess diverse material. Though all material was requested within the same corporation, this potentially limits the generalizability to other companies managing CCM work. Lastly, the company was required to alter its program facilitation due to current COVID-19 safety measures. For this reason, the literature review included an assessment of the effectiveness of online training programs versus face to face facilitation.

Pertaining to research assessments, the investigator is limited to measuring only the adverse factors associated with persistent exposure that include burnout, secondary traumatic stress, and compassion fatigue, even though Krause (2009) identified predispositions to include those with prior trauma exposure, diagnosis of complex trauma, limited social support, and significant stressors outside the workplace. The researcher does not have access to this information for ethical purposes and due to the company's limitations to request this data from employees due to employment laws.

Additional factors for consideration include attrition between April and September of 2020. The company does not track resiliency skills training attendance by the individual; therefore, it is impossible for the researcher to extract data from participants who have attrited from the company or determine if those who have attrited were a part of the 23% of participants that attended groups weekly. Site 1 reported an attrition rate of 7.12% between the start of April until the end of June, and Site 2 reported an attrition rate of 2.91%. Attrition rates limit analysis since the researcher cannot identify which participants attended the resiliency training and compared against the following quarter.

Finally, while true experimental design requires a control group, withholding care from those at high risk to psychological injury would be unethical because established literature identifies content moderation as a psychologically harmful occupation (Robertson, 2019). The risk poses difficulties in measuring the effectiveness of the resiliency program. Additional limitations include extraneous variables that may impact employee resilience outside of the content exposure, such as stress provoked by metric concerns (Dwoskin, Whalen, & Cabato, 2019) or distress related to COVID-19. This can diminish the effects of the program and the narrowed scope in addressing only factors related to psychological resilience as opposed to resilience for which there is extensive literature.

Definition of Terms

Burnout is "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment" (Maslach, 1982, p. 3) and is characterized by cynicism, psychological distress, feelings of dissatisfaction, impaired interpersonal functioning, emotional numbing, and physiological problems (Sprang, Clark, & Woosley, 2007).

Commercial content moderator (CCM) is an individual hired to review content that may be controversial and determine whether to take the content offline.

Compassion fatigue occurs following ongoing empathy and compassion toward others while disregarding one's self-care (Figley, 1995).

Protective factors are defined as "influences that modify, ameliorate, or alter a person's response to some environmental hazard that predisposes to a maladaptive outcome" (Rutter, 1985, p. 600).

Psychological distress refers to negative psychological consequences, such as symptoms of stress, anxiety, and depression (Finlay-Jones, 2014).

Psychological resilience is defined as "the role of mental processes and behavior in promoting

personal assets and protecting an individual from the potential negative effect of stressors" (Fletcher & Sarkar, 2012, p. 675; 2013, p. 16). The definition incorporates aspects of trait and process components of resiliency, as it changes throughout the lifespan dependent on person-environment interactions. For this reason, a program must include multiple levels of functioning as it relates to resilience (Fletcher & Sarkar, 2013).

Secondary exposure is described as "the negative impact of bonding to a trauma victim and exposure to a victim's traumatic material" (Ben-Zur, Gil, & Shamshins, 2012, p. 133).

Resilience factors refer to resources that "protect a person from the potential negative effect of encountered stressors by modifying the individual's response to stress and adversities" (Chmitorza, Kunzler, Helmreich, Tüscher, Kalisch, Kubiak, Wessa, & Lieb, 2018, p. 79). This occurs by integrating epigenetics, optimism, self-efficacy, environmental resources (social or material), and accessibility of the resources (Chmitorza et al., 2018).

Chapter 2

Literature Review

There are limited empirically validated studies specifically related to content moderation; therefore, research emphasis evaluated the effects of persistent social media use within the general population and careers with similar job requirements. Prior research concerning social media use, such as Instagram and Facebook, discovered a significant positive relationship between excessive viewing time and mental health disorders with increasing viewing time of three or more hours of use. Symptoms endorsed were associated with depression, anxiety, low self-esteem, and body dissatisfaction when measuring well-being (Błachnio, Przepiórka, & Pantic, 2015; Sherlock & Wagstaff, 2019). Thus, the literature review first addresses the risk factors associated with repeated use or exposure of images and text within similar fields and the general population (O'Reilly, 2018; Krause, 2009) as CCM staff review up to twenty-five hundred images or text per day of posts (Parks, 2019).

After examining literature outlining the risk factors associated with prolonged exposure (Krause, 2009; Błachnio et al., 2015; Sherlock & Wagstaff, 2019), the employee's age and emotional regulation capacity are other vital determinants to explore when assessing the effects of trauma exposure. To date, no statute on age restricts companies from employing young adults as content moderators (personal correspondence with Rachel Lutz-Guevara). Consequently, it was relevant to discuss the potentially heightened danger of staffing young adults within content moderation because age mediates trauma exposure impacts. Furthermore, the lifespan theories on human development helped display the relationship between stressors, well-being, and burnout reductions with employees' age (Johnson et al., 2017; Mauno et al., 2013). Finally, to assess whether the current program under review provided adequate training to mediate the

adverse effects of trauma exposure, the investigator explored the factors associated with resilience and, more specifically, psychological resilience. Distinct areas of focus included protective and risk factors to resilience, with particular attention paid to established programs and measurement effectiveness, especially when administered online.

Exposure Risk & Stressors of CCM Protocol

According to literature, people encounter stressors and adversities in their environment daily, including the workplace. When presented with these stressors, the body releases cortisol increasing blood pressure; though, the body will return to the resting state without clinical intervention due to the natural recovery process (Zauta et al., 2010). When compounding problems arise, imbalances in the release of neurotransmitters, denial of the painful experience, or shifts in perceptions of safety can prolong the process or increase the intensity of distress, leading to trauma or stress-related disorders. The outcomes are termed professional burnout, compassion fatigue, secondary traumatic stress, or vicarious trauma (Zauta et al., 2010; Russell & Brickwell, 2014). While these present with moderate differences based on the theorist, all fall within the scope of compassion stress injuries that emphasize the effects of high empathy mixed with second-hand exposure to another's suffering (Russell & Brickwell, 2014).

Adverse Effects of Prolonged Viewing

Individuals who endure repeated exposure to graphic images or videos of violence toward others are at a heightened risk of developing compassion fatigue or secondary traumatic stress resulting from the visual or auditory observation of another's' trauma (Baird & Kraken, 2006; Russell & Brickwell, 2014). Individuals with prior trauma exposure, diagnosis of complex trauma, limited social support, inadequate preparation or training, and significant stressors outside the workplace are predisposed to compassion fatigue or secondary traumatic (Krause,

2009). Second-hand exposure was relevant to CCM staff since their work tasks involve persistent subjection to violent acts toward others (Roberts, 2018). No studies are currently identifying whether the population of content moderators experience these adverse effects, and if so, to what extent.

While CCM staff may not meet the full diagnostic criteria for PTSD, they may meet the requirements of other stress disorders such as vicarious traumatization, secondary traumatic stress, secondary post-traumatic stress disorder, and compassion fatigue associated with secondary exposure in the workplace (Ben-Zur et al., 2012). Newton (2020) and Robertson (2018) support this hypothesis through interviews with former CCM staff who endorsed intrusive thoughts or dreams related to the event, avoidance of triggers associated to the experience, increased physiological hyperarousal, anxiety, increased respiration, and emotional numbing attributed to viewing graphic content post-employment (Ben-Zur, Gil et al., 2012; Cieslak et al., 2014). If left untreated, repeated exposure can lead to maladaptive emotional and behavioral changes over time (Krause, 2009), making it imperative to measure symptoms of secondary traumatic stress and compassion fatigue within the content moderation population.

Krause (2009) addressed the problematic nature and adverse effects of repeated exposure to obscene or disturbing images and videos when studying child pornography and child exploitation investigators. These specialized detectives encountered unique stressors related to their work, with growing pressure to cover an overwhelming quantity of cases. The detectives accepted the risk of repeated exposure even though they faced limited support or understanding from the community as they viewed it as a civic duty (Krause, 2009). Similarly, CCM staff subscribe to this same sentiment of protection with little support or understanding from the general community regarding their work's purpose or nature. Lisa Parks (2019) stated that CCM

staff "proudly emphasize the social significance of their work, and alternately describe themselves as "policemen," "sniper," and "security" (p. 13). Conversely, both endorse feelings of hopelessness, wholly aware that the internet allows for continuous new avenues to post lude material due to the changing cyber-landscaping (Krause, 2009; Parks, 2019).

Over time, constant exposure can shift an individual's worldview and lead them to perceive that their environment is an unsafe place to reside. Frequency, duration, type, intensity, and perceived control were identified as sources of stress, while coping strategies played a crucial role in determining the level of employment burnout (Krause, 2009). These factors place both police detectives and CCM staff at an increased risk of developing acute and chronic stressors that eventually interfere with their organizational, personal, and interpersonal lives (Krause, 2009; Newton, 2019).

Current journalistic publications related to content moderation heavily inflate the prevalence of PTSD within CCM staff who have worked within the industry. However, interviews were conducted on small and biased samples of separated employees (Barrett, 2020; Newton, 2019), resulting in outcomes with low statistical power, inflated false discovery rate, and inflated effect size estimation (Colquhoun, 2014). By contrast, on average, 3.6% of those within the general population who encounter traumatic events (i.e., warfare, sexual trauma, combat, etc.) will meet full PTSD criteria according to the World Health Organization (2013).

Idås & Backholm's (2017) results provided further support of the WHO's (2013) findings when studying news war correspondents. When conducting regression analysis assessing for the relationship between post-traumatic stress symptoms (PTSS), post-traumatic growth, and workplace social support using the Impact of Event Scale-Revised subscales (intrusion, avoidance, hyperarousal) and the Posttraumatic Growth Inventory, nine percent of journalists

covering terrorist attacks endorsed symptoms correlated with PTSD, while 40% reported post-traumatic growth. Only the Intrusion subscale found a significant positive effect on post-traumatic growth. The relationship resulted from how the person managed the event, resulting in less intrusive thoughts resulting in, at times, positive growth (Idås & Backholm, 2017). The small percentage for both supports the notion that the vast majority of individuals can effectively cope when encountering significant stressors or trauma; however, they may present with less severe, stress-related disorders following persistent exposure. Thus, the study will assess employees' mental health by measuring secondary traumatic stress as opposed to PTSD.

Social Media Use

CCM staff review up to twenty-five thousand images per day of posts (Parks, 2019), leading to a deterioration in their mental health even when assigned seemingly benign material (O'Reilly et al., 2018). While studies concerning social media, use have primarily focused on the adolescent population, qualitative analysis has discovered consistent negative themes on social media's continuous use within the general population (O'Reilly et al., 2018). Within O'Reilly et al. 's (2018) phenomenological study on 54 adolescents aged 11-18, the participants report the assumption that persistent exposure led to a threat of well-being and traumatization resulting from malicious content the mildest form. Themes related to trolling and bullying lead to increased depression symptoms, low self-esteem, stress, suicidality, and addiction. A common theme across the study included a decline in mood by participants when reading negative commentary directed at strangers (O'Reilly et al., 2018).

Therefore, it is no surprise that because social media platforms rapidly update new content at a significantly higher rate than mass media outlets, viewers commonly experience changes in their perceived worldviews and mood (Sherlock & Wagstaff, 2019). Sherlock and

Wagstaff's (2019) study found a strong positive correlation between average time spent on Instagram and depressive symptoms ($r = 0.49$, $p < .001$), trait anxiety, ($r = 0.42$, $p < .001$), social comparison orientation ($r = 0.42$, $p < .001$), physical appearance anxiety ($r = 0.47$, $p < .001$), and body image disturbance ($r = 0.33$, $p < .001$). Furthermore, there was a negative correlation found between age and Instagram use ($r = 0.36$, $p < .001$) and social comparison ($r = 0.21$, $p < .019$), indicating a need to explore further age and the presence of adverse mental health conditions of content moderators (Sherlock & Wagstaff, 2019). These are similar to the results found in Błachnio et al. (2015) when studying the relationship between Facebook use and well-being. The results of their study found a positive relationship between Facebook instruction and depression ($r = 0.45$, $p < 0.001$), however no relationship between daily internet use and depression ($r = 0.08$, $p = 0.08$). This indicates that excessive use correlates with the endorsement of depressive symptoms (Błachnio et al., 2015).

While studies supported the idea that social media utilization increases the risk of mental health concerns due to unfavorable social comparisons, other studies indicate social media fosters positive well-being through authenticity, according to Reinecke and Trepte (2014). The stark contradiction between study results suggests the type of content viewed may be more impactful than the quantity of time spent viewing material (Berryman et al., 2018). The differences in reaction to the material are relevant since content-moderators view controversial material for prolonged periods. Consistent with prior research findings (Berryman et al., 2018), the quantity of time per day viewing material is less impactful than the type of content examined.

Lifespan Perspective of CCM

According to the literature addressing the worker's lifespan, the employee's age and emotional regulation are necessary to examine further. Even when proposing pre-hire screening

to evaluate the goodness of fit for the position, articles continuously fail to address the viable necessity for age restrictions (Newton, 2020; Robertson, 2018; Parks, 2019). Studies related to brain maturation and emotional maturity are additionally explored.

Brain Development and Emotion Regulation

Studies measuring brain maturation found that the process of myelination in the brain, specifically the cortex's peripheral prefrontal cortex, continues developing rapidly throughout early adulthood. "Neuropsychological studies show that the frontal lobes are essential for such functions as response inhibition, emotional regulation, planning, and organization" (Sowell et al., 1999, p. 860), leading to improvements in cognitive functioning as people age. Conversely, parietal, temporal, and occipital lobes display mild maturational change from adolescence to adulthood (Sowell et al., 1999).

Understanding the process of brain maturation is imperative since the sensory functioning and reactivity cortices reach full maturation in young adults, along with the lateral temporal lobes involved in auditory and language processing. However, young adults lack full maturity to regulate their emotional state (Sowell et al., 1999). It is important to apply the process of brain development to CCM staff, since many falls within the developmental stage of young adults, resulting in their brain fully processing the auditory and visual material reviewed, yet lacking the full ability to cognitively process the event and regulate their emotional reaction to the content.

Age of the Workers

According to Johnson et al. (2017), employers are more reluctant to hire older adults than younger workers due to the presumption that skills, abilities, and performance decline in older workers according to the deficit hypothesis. Conversely, findings suggest that, as workers age, they use more positive emotion regulation strategies, possess higher emotional competencies,

and are more engaged and confident in their work. Furthermore, older adults experience less exhaustion and cynicism than their younger counterparts. The findings are substantive as these critical qualities are also associated with increased well-being and reduced burnout (Johnson et al., 2017; Mauno et al., 2013).

Mauno et al. (2013) discuss psychological lifespan theories on human development and propose that job stressors and the individual's reaction to those stressors may differ by age; however, they only explore secondary findings. Mauno et al. (2013) reference the socioemotional selectivity theory by Carstensen et al. (1999) that explains how older adults experience more favorable events resulting, while feeling less concerned about their future, leading to more positive emotions and worldview. Furthermore, based on Rousseau's (1989) psychological contract theory, older employees report more investment and less disruption in their satisfaction with their employer, while younger counterparts reported more dissatisfaction and higher expectations of the company, leading to greater burnout.

Mauno et al. (2013) chose to conduct a study on 3,701 nurses, academics, and service workers to evaluate whether age moderated job stressors or, more specifically, job insecurity, workload, and work-family conflict by analyzing covariance (ANCOVA). Participants were grouped as 18–34, 35–44, 45–54, 55–68, with a mean age of 43, and asked to complete the Job Security measure, the QPS Nordic Questionnaire to measure workload, and The Multidimensional Measure of the Work-Family Conflict scale to measure imbalances between family and work that can lead to dissonance or confrontation in the workplace. Following, the authors used moderated hierarchical regression analysis to "examine the moderated effects of job stressors and age on well- being (job and life satisfaction, vigor, and work-family enrichment)" (Mauno et al., 2013, p. 415).

Results of the study found age mediated the adverse effects of work-family conflict on life satisfaction and workload; though, solely within the academic profession, with similar findings within the service sector, and only within job satisfaction. The study also indicated that, as participants aged, they presented with increased emotional regulation and work-family balance, with a decreased endorsement of negative thoughts or emotions. There were no statistically significant differences between nurses and the former groups, indicating that age may not mediate well-being when there are increased stress demands within a workplace (Mauno et al., 2013).

The studies related to age and its relationship with brain development and emotional regulation informed the current study to assess the potential connection between the age of workers and well-being when working within content moderation as no recent findings exist. Younger adults within the CCM population may present at a higher risk than their older counterparts and may develop long term adverse effects. With the current limitation concerning age in literature, the current study categorized age groupings to assess differences in scores for resiliency and well-being (compassion satisfaction, burnout, and STS).

Psychological Resilience in the Workplace

While it is relevant to monitor CCM staff for potential symptoms associated with trauma or stress-related disorders, pre-emptive approaches to treatment may prove beneficial to reducing the impact of exposure to traumatic material. As stated prior, Robertson (2018) addressed the necessity for care of CCM staff; yet failed to discuss the benefits of providing preventative strategies. The DSM-5 outlined the importance of clinical treatment and emphasized that failure to meet criteria does not justify withholding or limiting access to appropriate care (American Psychiatric Association, 2013).

Barrett (2020) wrote a recent article examining the limitations of care by Business Process Outsourcing Companies (BPO), reporting that unlicensed coaches facilitated treatment provided to CCM workers with a limited scope of trauma care knowledge. These “wellness program" interventions consisted of breathing exercises, yoga, and art with minimal skill application to their work or capability to process their experience (Barrett, 2020). Such inadequate or improper care resulted in employees' mental health decompensation and legal action against employers (Newton, 2020). As a result of the lawsuits, social media entities set minimum standards for BPOs, requiring onsite assistance 24-hours a day, limitless breaks to disengage from the content as needed, adequate space for the facilitation of process groups, and the stipulation that companies offer "wellness programs." Even with the outlined statement of work, outsourcing companies were assigned the task to create specialized programs unique to their organization to assist CCM staff (Barrett, 2020), with no studies to date monitoring the programs’ impact or effectiveness.

The application of health and wellness in the workplace is not a new concept. The World Health Organization (WHO) first defined wellness in 1948 and emphasized the importance of physical, mental, social health, and thinking beyond the absence of disease (World Health Organization, 1948). Since, there has been a pivotal shift to a multifaceted, holistic integration when considering an individual's health, with multiple theories emerging that incorporated wellness dimensions. In the last two decades, following dissatisfactions in models that attempted to integrate too many dimensions into workplace wellness programs, a pivotal shift to a narrow focus of resilience emerged (Myers & Sweeney, 2004).

Resiliency programs have historically spanned multiple fields to include clinicians, researchers, patients, public health agencies, and governments since resilience is considered a

malleable construct (Myers & Sweeney, 2004). A collective interest has evolved between academic and industry groups, since "a growing body of research suggests resilience training may play a pivotal role in the realm of public health and prevention, particularly with regards to protecting the long-term well-being of workers" (Joyce et al., 2018, p. 33). For this reason, a variety of programs exist that are relevant to both generalized and specific populations; are used as treatment interventions at either primary or secondary levels of care; and test interventions with healthy and unwell people (Leppin et al., 2014).

Trait Versus Process Theories of Resilience

Resilience is defined as "an outcome of successful adaptation to adversity" (p.1); however, opposing views exist as to whether to identify resilience as a stable trait or a process (Garrido-Hernansaiz et al., 2020). A shift in thought has occurred from the perception that resilience is a stable trait, where an individual is limited by their biological attributes to manage adversities, to a process, where skills are learned that shape one's overall resilience (Garrido-Hernansaiz et al., 2020). The program developer's view of resilience, whether process or trait oriented, directed the program's learning objectives and expected outcomes.

Some theories, such as the Workforce Resilience Model, support the notion that resilience is an interaction of both trait and process, such as the trait neuroticism mediating the positive outcomes of learned resilience (Rees et al., 2015). Similarly, Lu et al. (2014) support this school of thought, however, further include constructs of extraversion- openness, agreeableness, and conscientiousness- as moderators of an individual's level of resilience later in life. The authors tested their theory on 289 students by exploring the relationship between extraversion, neuroticism, resilience, happiness, and positive and negative affect using the NEO-FFI, Connor-Davidson Resilience Scale, and the Oxford Happiness Inventory (OHI), and Positive and

Negative Affect Schedule in a correlational study. The study results showed a significant positive correlation between resilience and extraversion. Additionally, neuroticism was found to have an inverse relationship with psychological resilience and extroversion; however, resilience mediated the interaction between neuroticism and negative affect (Lu et al., 2014).

Results emphasize the need to consider how personality traits moderated the ability for CCM staff to integrate and practice learned resilience skills in a trained setting and apply them to their work environment (Lu et al., 2014). The research indicated that personality traits might create barriers to using skills from resilience development courses and require an increased duration before witnessing a resiliency programming's mediating effects.

Conversely, Zauta et al. (2010) strictly address process theory and exclude personality traits. The authors explained how psychological resilience is not static but fluctuates dependent upon person-environment interactions that influence the changes. They explain that the primary determinant of psychological resilience within process theory includes environmental factors and incorporation of adaptation principles ignored within the trait theory (Zauta et al., 2010). Researchers that view resilience as a process consider multiple influences when assessing an individual's level of resilience that include the person's "strength, flexibility, and reserve capacity" (p. 5), along with the community resources accessible (Zauta et al., 2010), and measure their appraisal to the adversity, coping, and help-seeking behavior (Ijntema et al., 2019). Therefore, psychological resilience is a process since it is a dynamic versus static concept where resilience skills can be improved or even acquired, and accomplished by identifying emotional states and improving emotional competencies (Ijntema et al., 2019; Tempski et al., 2012).

Hernansaiz et al. (2020) conducted a study using the process theory of psychosocial resilience on 525 participants by comparing groups of individuals with high and low resilience

within the general and vulnerable population (i.e., cancer patients, HIV-infected patients, and parents of children with cancer) and assessed their relationship between coping strategies selected. Results showed no differences between the general population and the vulnerable population related to low and high resilience. When comparing high resilience versus low resilience groups, results found that all utilized help-seeking coping strategies, though, those with high resilience used more problem-solving, positive thinking, and thinking avoidance than the low-resilience group (Hernansaiz et al., 2020).

Results indicate that, regardless of those identified as high or low, both utilized coping skills and presented with similar degrees of resilience irrespective of vulnerability. Groups differentiated only by the coping strategies used, where those within the general population employed more emotional expression than the vulnerable populations and isolated less often (Hernansaiz et al., 2020). Furthermore, the study revealed that the vast majority of the population is resilient, meaning the construct is not isolated to a specific group or trait.

Protective & Risk Factors for Resilience

Protective Factors

When applying the process theory, Rees et al. (2015) identified self-efficacy and coping as overlapping psychosocial factors related to psychological resilience and adjustment. Employees with high self-efficacy present with lower anxiety levels, increased work satisfaction, and more coping skills (Rees et al., 2015). Hernansaiz et al. (2020) further support the importance of coping strategies, asserting it acts as a crucial part of psychological resilience. For this reason, research on coping strategies that include purpose in life, social connectedness, stress management, mindfulness, and acceptance was discussed, as they are prevalent throughout techniques used within resilience programming literature (Rees et al., 2015).

Awareness, identified as a key factor of psychological resilience, is associated with developing a purpose in life; however, cultures differ in their perception of the concept (Zauta et al., 2010). Zauta et al. (2010) stated, "Western views focus on choice and mastery over the environment, whereas Eastern philosophies emphasize full awareness and acceptance of experience, however painful, to gain an enlightened and 'joyous' view of the world" (p. 8). Furthermore, the author maintained that humans instinctively pursue purpose outside of basic survival by fostering positive experiences. This is done so as a way to develop an essential meaning in life to survive and recover from stressors (Zauta et al., 2010).

Min et al. 's (2013) research conjointly examined the resilience factor of awareness in 125 individuals diagnosed with depression and anxiety. Results on the "purpose in life" test (PIL) discovered that participants who identified meaning or purpose in life and a motivation for physical movement were more resilient than those who did not. Participants with low to medium resilience endorsed low scores within spirituality and purpose in life, indicating a lack of capability to process "meaning finding" from their experiences (Min et al., 2013). Idås and Backholm's (2017) study on war journalists further supports the coping strategy of purpose finding, paradoxical to their original hypothesis. Although the journalists endorsed post-traumatic symptoms (PSS) following more challenging assignments, they reported greater satisfaction in taking part as an active participant in the traumatic event. The authors attribute their findings to disruptions in the reporter's worldview that result in positive changes, termed personal post-traumatic growth (PTG) associated with finding purpose following trauma experiences (Idås & Backholm, 2017).

Furthermore, Idås and Backholm's (2017) research emphasized the importance of social support seeking, identified as another protective factor associated with psychological resilience.

Their study found that 80% of the 375 crisis and war journalists reported receiving social support following the 2011 terror attack in Norway. After conducting a regression analysis, subscales within the Social Support Scale found that increased support directly correlated with high levels of post-traumatic stress symptoms measured by the Impact of Event Scale-Revised; however, there was an inverse relationship with perceived benefit. The results indicate that the amount of support is less relevant than the quality (Idås & Backholm, 2017).

Li et al. (2018) encountered conflicting findings for social support as well, with higher levels of social support positively correlated with avoidant behaviors in their study on 220 college students. The authors found a significant partial mediation for resilience, self-efficacy, and social support seeking on stress and problem-solving through structural equation modeling on resilience, self-efficacy, social support seeking, stress, and problem-solving. The results inform that the three can diminish the effects of stress and increase problem-solving, although stress will still exist (Li et al., 2018).

Finally, mindfulness, the most studied protective factor associated with psychological resilience, requires the individual to engage in a non-evaluative immediate state of awareness of one's current internal and external experiences. It is associated with lower levels of depression and anxiety within clinical and non-clinical populations, protects against the manifestation of PTSD among service personnel, and has a positive relationship with subjective well-being (Bajaj & Pande, 2016; Joyce, 2018a). Mindfulness is a psychological trait where individuals possess the capacity of heightened awareness of everyday life experiences and are identified as a process that can be instructed and increased through training. Prior research established that mindful people responded to challenging situations with increased emotional regulation, were more adaptive,

and coped with difficult emotions without disengagement or defeat (Bajaj & Pande, 2016). This conclusion indicated strong applicability to the work of commercial content moderation.

To test the "mediating role of resilience in the impact of mindfulness on life satisfaction and affect as indices of subjective well-being" (p. 65), Bajaj and Pande (2016) conducted a study on 227 undergraduate students through the administration of The Mindful Attention Awareness Scale (MAAS), Satisfaction with Life Scale (SWLS), Connor–Davidson Resilience Scale (CD-RISC), and the Positive and Negative Affect Scales (PANAS). Results found a positive correlation between mindfulness and life satisfaction and positive affect. Resiliency significantly mediated mindfulness, greater life satisfaction, positive affect, and lower negative affect. This indicated that awareness and acceptance lead to greater resilience, with an outcome of increased well-being (Bajaj & Pande, 2016).

When applying mindfulness to resiliency programming, Joyce et al. 's (2018b) meta-analysis found that mindfulness and cognitive-behavioral therapy (CBT) based programs had moderate effect sizes with protecting an individual's well-being and enhancing resilience. Out of those identified as good/fair, most were applied to populations that included chronic illness (Cerezo et al., 2014; Loprinzi et al., 2011; Steinhardt et al., 2015; McGonagle et al., 2014). Of those relevant to the working population, the primary focus included medical workers (Mealer et al., 2014; Sood et al., 2014; Chesak et al., 2015; Erogul et al., 2014). Studies with similitude of content moderators' psychological implications involved police officers, yet, officer's first-hand exposure differentiates them (Joyce et al., 2018a) as CCM staff encounter second-hand exposure.

Additional studies on mindfulness included Burton's (2010) READY (Resilience and Activity for Everyday) program that instructed coping skills of mindfulness along with "acceptance, life values, social connectedness, relaxation, pleasant activities, and activating and

troubleshooting strategies" with 16 participants (p. 269). The program concepts centered on resiliency and psychosocial well-being within the healthy adult versus unwell population by providing a more preventative approach, targeting those at risk of developing stress-related illness and depression. The program's key protective factors included positive emotions, problem-solving, and life purpose. Acceptance and commitment therapy (ACT) and cognitive-behavioral therapy (CBT) informed practice application, similar to studies identified within Joyce et al. (2018b).

Burton's (2010) within-subjects design found significant differences at the .05 level for mastery (effective and competent use of opportunities and external activities), while scores on the depression inventories only approached significance. Following the satisfaction rating scale, respondents rated the program high in effectiveness, frequency, and duration; however, only 56% agreed the program length was sufficient, and 31% reported a need for the increased duration (Burton, 2010). The study justified ongoing programming versus a few days or weeks.

Finally, Arnetz et al. (2013) recognized the necessity for specialized interventions to assist police officers managing their work's ongoing stress. The authors developed a program to bolster resilience through mindfulness-based and CBT interventions intended to increase a sense of control, enhance coping, and minimize the negative impacts officers encounter during stressful situations. Programming is imperative as officers and first responders are at a higher risk of exposure to traumatic events than the general population, increasing their risk of depression, anxiety, and PTSD (Joyce et al., 2018a).

The authors tested the program's effectiveness by providing ten weeks of 90-minute sessions: "relaxation training, use of guided imagery to facilitate imaginal exposure to potentially stressful on-the-job incidents, and the mental practice of police tactical skills" (p. 91) on 75

police officers. Participants first received psychoeducational group training that addressed stress theory and its impact on health and performance, imagery-based exposure, and didactics in adaptive coping strategies. In training, officers were taught coping strategies in tandem with exposure to strategies likely experienced in the field, a practice intended to increase cognitive processing when faced with real life situations (Arnetz et al., 2013).

Assessments were taken at three points with the control and experimental groups; before training, completion of training, and 18 months actively in service. A two-way, repeated-measures ANOVA found significantly lower scores in the intervention group on the General Health Questionnaire (GHQ), indicating higher functioning and fewer distress symptoms at both the post-intervention and 18 months follow up (Arnetz et al., 2013). Results suggest that guided imagery resilience training can assist vulnerable populations exposed to traumatic events.

Steinhardt and Dolbier (2008) tested the effects of coping strategies on stress reduction, however, included enhancement of resilience and protective factors by conducting a quantitative study on 57 college students by comparing those provided a four week 2-hour resiliency intervention program (n = 30) compared to those in the control waitlist group (n = 27) to decrease stress. The study aimed to reduce maladaptive coping strategies, pathology, and psychosomatic symptomatology measured by pre and post-test assessments. Steinhardt and Dolbier's (2008) study went a step further by teaching skills instead of merely measuring the constructs' relationship. The groups were psychoeducational and included techniques related to cognitive behavioral therapy, rational–emotive therapy, and internal family systems therapy.

Results found significantly increased scores on the Dispositional Resilience Scale (DRS) and the Connor–Davidson Resilience Scale (CD–RISC) than the control group. When comparing groups on coping using the Brief Coping Orientations to Problems Experienced (Brief COPE)

scale, similar results were found with the experimental group utilizing problem-solving coping skills significantly more often than the control reported emotion-coping and avoidant-coping strategies. Finally, those within the experimental group scored significantly lower on depressive symptoms, negative affect, and perceived stress based upon scores from the PANAS, Center for Epidemiologic Studies Depression Index (CESD), Perceived Stress Scale (PSS), and the Symptoms Checklist (Steinhardt & Dolbier, 2008). Results indicate that interventions facilitated by a mental health licensed professional can improve coping capabilities in high-stress transition periods.

Risk Factors for Resilience

A vast majority of resiliency in the research has focused on adverse psychological effects to include PTSD, though, studies have found that traumatic life events, whether in childhood or adulthood, correlated with depression, anxiety, psychosomatic disorders, substance abuse, and antisocial behavior (Min et al., 2013). Children are categorized as most vulnerable because they cannot fully comprehend life-threatening experiences and are emotionally dysregulated; their ability to cope with an event is limited. This can lead to disruptions in reaching homeostasis and heightened reactive states when faced with significant stressors later in life (Zauta et al., 2010).

Min et al.'s (2013) study assessed risk factors based upon a history of childhood maltreatment and other trauma using the parent-child conflict tactics scales (PCCTS) and life events checklist (LEC) on individuals diagnosed by a psychiatrist with depression, anxiety disorder, somatization, hostility, and problematic alcohol. Individuals were characterized by either having low, medium, or high resilience based on scores from the Connor Davidson Resilience Scale (CD–RISC). Further assessments included the Beck depression inventory (BDI), the state-trait anxiety inventory (STAI), somatization, and hostility subscales of the

symptom checklist 90-revised (SCL-90-R), and the alcohol use disorder identification test (AUDIT).

By conducting a one-way analysis of variance (ANOVA) to compare the groups and multinomial logistic regression analysis, significant differences between mean age, exercise frequency, and degree of childhood emotional maltreatment across all three groups were detected. Younger participants were correlated with low resilience instead of their older counterparts associated with the high-resilience group ($P = 0.012$ and $P = 0.048$). Younger participants and those with a history of increased traumas fell within the moderate resilience category with the severity of diagnosis as a mediating factor. Furthermore, trait anxiety was correlated with low resilience. These risk factors may interfere with an individual's ability to utilize resilience skills and should be considered when providing individualized treatment plans for persons with histories of multiple traumas, childhood abuse, and trait anxiety (Min et al., 2013).

Online Resilience Programs

Based upon the historically low participation rate of the company's program with an average adherence of 24% for quarter one and the current requirement for all employees to work from home due to COVID-19 risks, it was imperative to address the literature related to engagement when facilitating the program in an online environment. A meta-analysis on 21 web-based psychological intervention programs from 2000 to 2016 conducted by Carolan et al. (2017) found challenges related to engagement and adherence to program requirements within online programs with mean adherence at 45%.

Even with low attendance rates for the completion of modules, "occupational digital mental health interventions had a statistically significant effect post-intervention on both

psychological well-being (g=0.37, 95% CI 0.23 -0.50) and work effectiveness (g=0.25, 95% CI 0.09 -0.41) compared with the control condition" (Carolan et al., 2017, paras. 3). When comparing the differences between theoretical approaches, guided versus self-guided facilitation, or specific workplace populations versus universal workplace populations, no statistically significant differences were found. Results of their study indicate that overall, online facilitated programs increase employee well-being when strategies are applied to constructs of stress reduction, depression, and psychological distress (Carolan et al., 2017). Although effective, the study excluded individuals at risk of complex mental health concerns and PTSD, providing limitations to the current research. Further, mediums for communication, such as videoconference or e-counseling, are available to the present study employees, potentially leading to greater well-being (Carolan et al., 2017).

Other resilience specific online training programs included the ResilienceOnline (ROL) program (Abbott et al., 2009) and the Resilience@Work (RAW) Mindfulness Program (Joyce et al., 2018b). The internet-based ResilienceOnline (ROL) program was formulated on cognitive theory and included seven components of resilience: emotion regulation, impulse control, optimism, causal analysis, empathy, self-efficacy, and reaching out. The program was administered to participants through an online platform of pre-recorded segments facilitated by a psychologist, with access to the presentation slides. Facilitators consisted of Virtual Partners that answered questions throughout the learnings (Abbott et al., 2009). The site did not require completion of all seven segments and was intended for leisure use (https://www.powerthinkingcorp.com/what-is-powerthinking/), with no supporting research validating its effectiveness to date.

A study conducted by Abbott et al. (2009) applied the ResilienceOnline (ROL) program within an organizational place and evaluated its effectiveness by utilizing an online platform for administration, and assessed its application to 27 work from home sales managers compared to 26 within a control group. The study conducted a randomized controlled trial design by evaluating differences in scores on the Authentic Happiness Inventory (AHI), The World Health Organization Quality of Life – BREF (WHOQOL-BREF), and the Depression Anxiety and Stress Scales (DASS- 21) through three administrations identified as pre-intervention, post-intervention, and follow-up (10 weeks following the end of study)

The study concluded no significant differences between groups related to depression, anxiety, stress, quality of life, happiness measures on the DASS-21, WHOQOL-BREF, and AHI, when conducting repeated measures MANOVAs. The only significant differences found within the study included a time main effect for both groups, who reported increased happiness at the end of the ten-week study period. There were limitations within the study, including a high risk of bias, as the attrition within the experimental group on the post-intervention test reached 46 percent, and findings may have resulted in a type 1 error (Abbott et al., 2009).

With the low completion rate found within Abbott et al. (2009), Joyce et al. (2018) sought to assess whether a solely online-based resilience program could maintain engagement of its users by providing "interactive exercises, audio, and animation" (p. 36). Furthermore, the authors assessed whether the online platform was an appropriate form of administration of material for a high-risk population by including a sample of 29 firefighters. The authors chose to evaluate the firefighters' resilience and psychological skills using the 10-item Connor-Davidson Resilience Scale (CD-RISC 10), the Acceptance and Action Questionnaire-II, and participation to measure experiential avoidance (Joyce et al., 2018a).

Findings included several limitations within the studies reviewed within their meta-analysis (Joyce et al., 2018b); accordingly, the authors developed the Resilience@Work (RAW) Mindfulness Program. The program includes six 20-25-minute psychoeducational training modules drawing from skills from evidenced-based therapies to include ACT, Mindfulness-Based Stress Reduction, and Compassion-Focused Therapy. The course's primary focus is on mindfulness practices; however, the program teaches stress and coping management techniques, emotion regulation, and intends to enhance psychological flexibility- awareness, and openness to experiences (Joyce et al., 2018a).

Only 11 out of 29 (38%) completed all six modules, with 16 (55%) achieving at least half (M=3.6, SD= 2.2). Age, level of education, years of working as a firefighter, or gender were predictor factors for assessing completion potential. Scores within the post-test trended toward increased resilience on the CD-RISC 10, reductions in psychological inflexibility, experiential avoidance following training, and cognitive fusion. Yet, none were found to be significant between pre- and post-tests. Results further support the consistent limitations of providing strictly online facilitated training. Furthermore, the study presented several limitations; small sample size, no control group, and no attempt to follow up to assess skills retention (Joyce et al., 2018a).

Aikens et al. (2014) conducted a study to assess the effectiveness of a modified Mindfulness-Based Stress Reduction (MBSR) program within the workplace on 90 individuals (44 experimental and 46 control). Prior established programs require 30 hours of instructor-led training, with an additional requirement from participants to practice 30-45 minutes. The authors modified an MBSR program to accommodate workplace practice to reduce stressor, increase mindfulness, enhance resiliency within a work environment, and increase scalability. The

program included seven one-hour online modules or one 7-hour module. Topics included breath focus, body scan, yoga, physical sensations, focuses on sound and thought, poetry, awareness meditation, mindful communication, and progressive muscle relaxation.

Participants were administered a pre- and post-test comprising the Five Facets of Mindfulness Questionnaire, The Perceived Stress Scale, Connor-Davidson Resilience Scale, Shirom Vigor Scale, and the Lifestyle Survey Questions. For inclusion of results, participants must have completed at least 50% of the classes and have completed the pre and post-tests, diminishing the sample to 36 within the experimental group. The results of the within and between subjects comparison are as follows; participants that completed the program presented significant reductions in "perceived stress as well as improvements in resiliency, vigor, and mindfulness as compared with controls" (p. 8). Furthermore, those who completed 75%-100% of the program have a 30% greater effect size than their counterparts (Aikens et al., 2014). Results indicate that self-paced online mindfulness skills courses can assist with stress reduction in the workplace.

The studies help determine relevant topics when developing an online resilience program that includes adaptive coping, mindfulness and awareness, finding a purpose in life, and seeking social support. The current program under review consists of eight months that cover these specific identified coping strategies. Additional topics provided by the program exceed those mentioned within the existing literature to include neurobiology, self-regulation, the importance of self-care, and peak functioning where self-confidence and creativity were addressed.

Resiliency Program Measurements

Three meta-analyses on resilience training programs' effectiveness sought to define the relevant classifications and constructs of resilience. Leppin et al. (2014) considered studies that

directly measured resilience and those related to resilience, such as depression and anxiety. This somewhat aligns with Robertson et al. 's (2015) view, which justified the necessity to assess other constructs correlated with resilience and report the effect size of mental health and subject well-being. Joyce et al. (2018b) refuted the inclusion of such studies, asserting that well-being, resilience, and mental health symptomatology differentiated. The authors argued that programs could enhance mental health or well-being while failing to increase resilience, and vice versa (Joyce et al., 2018b).

Windle et al. (2011) provided support for a valid psychometric selection of the 10-item CD-RISC to measure resiliency. The authors conducted a systematic methodological review of established resilience measures over the last 20 years to evaluate the psychometric properties' rigor. This was done by utilizing published quality assessment criteria, "formally used to assess the psychometric properties of health status measures" (p. 2) and covered content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects, and interpretability. Areas of consideration within the evaluation of the measures included applicability, identified as the target population, and "research and practice implications" (p. 4). Only peer-reviewed journal articles were chosen and based upon the primary focus of resilience. Assessments were compared by setting, perspective, intervention, comparison, evaluation, and methodological approach. There was no specific population of interest, so studies included children, adolescents, adults, and older adults, which helped identify measurements that apply to multiple age groups (Windle et al., 2011).

Fifteen measures were identified for further review, and six scored high on two criteria when examining their overall quality. These measurements included: the RSA, Brief Resilience Scale, Resilience Scale, Psychological Resilience, READ, and CD-RISC-10. Only four measures

achieved the maximum points for content validity- Resiliency Attitudes and Skills Profile, CYRM; Resilience Scale; READ- while others, even with clear intentions and concepts, failed to assess the target population. When evaluating internal consistency, all measures had acceptable Cronbach's Alpha for the full scale, though minimal information was available related to subscales. Only the Resilience Scale reported a > 0.70 and <0.95 for all subscales, while others such as the READ only reported acceptable Cronbach's Alpha for one subscale. None of the measures met criterion validity, with only the Brief Resilience Scale reporting moderate correlations of 0.59 on the CD-RISC and 0.51 on the ER-89. Conversely, eight measurements scored high in construct validity which included: ER-89, CD-RISC (both 25 and 10 item versions), RSA (37 and 33 item versions), Brief Resilience Scale, RS, Psychological Resilience, the READ, and Ego-Resiliency (Windle et al., 2011).

In any of the papers, reproducibility was not found within the 15 measures; they varied between acceptable to excellent reliability. Finally, only the CD-RISC conducted a pre and post-test analysis and specified changes to meet global clinical improvement following the intervention when evaluating responsiveness. When assessing for interpretability, eight measures met the standard by providing statistically significant differences between groups intended to differ, though none provided clarification on clinically meaningful changes in scores. Overall, recommendations included the CD-RISC (10 and 25 item) and the RSA, as they received the highest rating; nonetheless, would classify as moderate concerning quality. Furthermore, the vast majority of the assessments focused primarily on adaptability to change and failed to address other relevant concepts to include family and community support. Finally, the assessments more reasonably measure the identification of resource accessibility as opposed to an individual's resilience level (Windle et al., 2011).

Chapter 3

Methods

The current study aimed to assess the effectiveness of a resiliency program developed for content moderators and facilitated by mental health clinicians by evaluating scores related to psychological resilience and mental health risks in the workplace. The program is based upon the Model of Individual Workforce Resilience (Rees et al., 2015), and utilizes a skills-based coaching approach "characterized by a higher level of structure and more directive style of coaching, a fairly narrow skill or behavioural focus, and a short timescale" (Robertson et al., 2015, p. 540). The program's framework is structured on LaMontagne et al. (2014) recommendation to include access to interventions at the primary, secondary, and tertiary levels of care.

The researcher collected archival data for comparison, beginning on the first of September. This is classified as secondary analysis since the data was gathered from psychological assessments already administered by the company. Information was de-identified by the company before being released to the primary investigator. Access to data was permitted for Quarter 1 (January through March), Quarter 2 (April through June), and Quarter 3 (July through September). Assessments were administered the second month of the cycle and left open for teammates to complete within one month. The researcher chose this timeframe to ensure comparison results reflect the same social environment by controlling for the extraneous variable of COVID-19 when conducting pre and post-test group analysis.

Hierarchical multilinear regression analysis was conducted through secondary analysis of the existing data set to compare differences in those provided resiliency programming to those not offered the program, predetermined by the company using the February data. The decision to

use February data resulted from a relocation outside of the US of a business line not offered wellness, limiting comparison for the following months. May and August's data did not include a large enough sample of individuals withheld programming to draw a comparison accurately. May and August's datasets were analyzed to compare differences in outcome variables following a procedural change where weekly attendance to training groups became mandatory in July. The outcome variables for all predictor variables included scores on the ProQOL and 10-item CD-RISC.

Participants

Study participants included 497 commercial content moderators aged 18 to 67, identified as "teammate" or entry-level staff employed at two locations by a provider of content moderation services based in the United States. Teammates within the companies provide support through technological tagging of information in the company with variations in the degree of content severity. Although the company measured all its employees' psychological resilience and well-being, only those classified as "teammates" were considered in the sample since they interact with the content daily. While no exclusion criteria were set regarding age, gender, or ethnicity of the employees, only those who had worked within their specific business line for a minimum of six months were evaluated to ensure proper acclimation to content exposure and their tasks. Any individuals termed or voluntarily separated from the company between Quarter 2 and Quarter 3 were excluded from the results.

In conducting the study, the researcher examined historical data collected and stored by the company, including scores on the Professional Quality of Life Scale (ProQOL) and 10-item Connor Davidson Resilience Scale (CD-RISC 10) that are administered quarterly. Following the two psychometric measurements, participants were provided demographic questions requesting

age, gender, race, and the highest education level through a link to a HIPPA compliant Google Form. Completing demographic information was entirely optional and left to the employee's discretion to complete, while the assessments required a forced response.

Assessments and Measures

Joyce et al. (2018a) stated that "A program may improve mental health symptoms, yet not enhance a person's overall psychological resilience or vice versa" (p. 34); therefore, the current study analyzed scores related to the outcomes of resilience and mental health or well-being. Prior literature assessing resilience has covered personal resilience, mental health, physical health, psychosocial functioning, and well-being-- lower scores of stress, anxiety, depression-- therefore, the current study requested scores for similar assessments to determine employee resiliency and professional quality of life/well-being, consisting of compassion satisfaction, burnout, and secondary traumatic stress. For this reason, measures included the 10-item Connor-Davidson Resilience Scale short form (CD-RISC 10) and the Professional Quality of Life Scale (ProQOL). Windle et al. (2011) identify the CD-RISC 10 as having the highest psychometric qualities related to internal consistency and construct validity when critically examining 15 resilience measurements.

Connor Davidson Resilience Scale (CD-RISC)

The CD-RISC presumes that resilience is a trait concept and fluctuates over time, dependent upon a multitude of characteristics that aid in an individual adapting to their environment. The CD-RISC was developed to quantify resilience and allow for generalizability across multiple populations and cultures (Connor & Davidson, 2003). The CD-RISC comprises 25 items and scored 0-100 with a higher score indicating increased resilience, with two shorter versions, the 10-item (CD-RISC 10) and 2-item (CD-RISC 2) scales, both developed by Drs.

Campbell- Sills and Stein (2009). For this study, the CD-RISC 10 was administered, which included ten items from the original scale with a scoring range of 0-40. Of a 764 US adult sample, a mean score of 31.8 (SD = 5.4) was found for the 10-item scale (Campbell- Sills & Stein, 2009). The measurement has good internal consistency and test-retest reliability, and the validity of the assessment is comparable to other widely used measures of stress (Connor & Davidson, 2003). According to Rees, Breen, Cusack, and Hegney (2015), the scale is the most widely used measure of resilience, with 77 approved multiple translations currently available (Translations of the CD-RISC, n.d.).

The Professional Quality of Life Scale

(ProQOL) primarily examines the positive and negative emotional outcomes of work within helping professions where individuals must manage stressful circumstances. The 30-item assessment measures constructs of compassion satisfaction/compassion fatigue, burnout, and secondary traumatic stress; however, it is not intended as a diagnostic tool. With support from over 200 publications, the ProQOL has been found to have good construct validity, with thousands of additional publications utilizing the assessment to measure employee compassion fatigue, secondary traumatic stress, and vicarious traumatization (Geoffrion, Lamothe, Morizot, & Giguère, 2019). According to the ProQOL manual, “The Compassion Fatigue scale is distinct. The inter-scale correlations show 2% shared variance (r=-.23; co-σ = 5%; n=1187) with Secondary Traumatic Stress (STS) and 5% shared variance (r=.-.14; co-σ = 2%; n=1187) with Burnout" (p.17). The Burnout (BO) section shares a 5% variance with the STS section, though STS measures fear, while BO does not (Hudnall-Stamm, 2010).

Resiliency Program Procedures

During teammate company onboarding, employees were delivered a one-hour training which introduced twelve factors associated with resilience titled; self-regulation, self-awareness, neurobiology: how stress impacts the brain, good company, acceptance, non-judgmental/non-knowing, high self-care, optimistic worldview, alternative endings, searching for meaning, get out of your own head, and thriving: peak functioning and adaptive coping. Concepts are derived from the breadth of resilience literature (Bajaj & Pande, 2016; Zauta et al., 2010; Idås & Backholm, 2017; Li et al., 2018; Friborg et al., 2006).

A mental health clinician instructed the onboard training before exposing the employees to any work-related material. This was facilitated by the use of Resilience Enhancing Imagery (REI), which "is a combination of Rational Emotive Imagery (Ellis et al., 1997), Coping Imagery (Palmer, 2013), and Anti-guilt imagery (Palmer & Puri, 2006)" (Palmer, p. 49). The clinicians began by initiating Socratic dialogue with the group to address potential cognitive distortions that may impede the teammate's utilization of resilient skills later instructed within the training, by emphasizing learned helplessness. According to Palmer (2013), the technique is used to prepare for a potential feared response, much like a CCM worker's anticipation of exposure to controversial content.

Once employees completed the training, they were provided an additional one-hour psychoeducational training titled "Change your Mind: Trauma in the Brain," which offered skills-based neuroscience for re-wiring the stress/trauma response in the brain, as well as relaxation training and guided imagery to integrate concepts into the application to their work, similar to Arnetz et al. (2012). The main theoretical framework of practice included concepts

from rapid resolution therapy that informed individuals of the purpose of the brain segments that control emotional or impulsive responses, cognitive functioning, and survival (Bowles, 2019).

Following onboard training, CCM workers were given weekly programming focused on one resilient factor per month from twelve mentioned prior. The programming consisted of cognitive-behavioral therapy, dialectic behavioral therapy, and mindfulness-based interventions. The group sessions included 45-minute experiential activities labeled "resiliency training" facilitated by a licensed mental health professional during the employee's workday. The programming topical structure for the year is provided in Table 1.

Table 1

Monthly Programming Topics and Learning Outcomes

Month	Topic	Skills Focus/ Learning Outcome
January	Self-Regulation	• Emotional regulation- Decrease emotional suffering, learning to manage extreme emotions • Distress tolerance • Body-Based Skills • Eye movements-EMDR
February	Self-Awareness	• Emotional IQ- Emotional recognition in self and others • Growth Vs. Fixed Mindset • Moral Strength • Grit
March	Neurobiology: Stress Impacts the Brain	• Memory and Information processing • How trauma impacts the brain • Stress and the Brain
April	Good Company	• Social IQ-reading emotions of others • Communication • Boundaries- how to set and maintain • Self-Esteem- how to say no
May	Acceptance	• Denial and acceptance • Radical Acceptance

		• Courage • Wisdom
June	Non-Judgement/ Non-Knowing	• Observe and describe • Participate • Forgiveness
July	High Self Care	• Sleep Regulation • Thought field therapy • Balance and healthy pleasures • Nutrition and Exercise
August	Optimistic Worldview	• Self-Compassion • Creating Happiness
September	Alternative Endings	• Level of thought • CBT • Decatastrophizing
October	Search for Meaning	• Meaning in work • Meaning in adversity • Limiting helplessness
November	Get Out of Your Own Head	• Living in the moment • Mindfulness • Meditation • Grounding and Containment
December	Thriving: Peak Functioning and Adaptive Coping	• Mental and Emotional Thriving • Active coping • Self-confidence • Flexibility and creativity

Note: Topics are listed in sequential order from January to December

Employees were offered a secondary option, if they so choose, to receive specialized attention in the form of individual sessions with a licensed mental health professional during their designated wellness time. CCM workers had access to clinicians 24 hours a day, seven days a week, and with no set limit to the number of individual sessions an employee could request during the lifespan of their employment.

Statistical Analysis

Statistical analysis included hierarchical regression analysis to answer two research questions based upon the prior literature related to age, adjustment, and emotion regulation in the workplace (Sowell et al., 1999; Johnson et al., 2017). Age and gender were classified as categorical control variables within the analysis. This assisted in determining whether age mediated the effects of the resiliency training within specific age groups. Prior research has concluded that, as people age, they experience greater emotional stability than their younger counterparts (Kersting, 2004; Silvers et al., 2017), which can aid in learning acquisition and retention of resiliency skills for specific age ranges, conversely minimizing the negative impact to their well-being. For this reason, ages were grouped into 18-24, 25-30, 31-35, 36-40, 41-50, 51+ for comparison, and gender were grouped as either male or female.

Research Question 1

The researcher sought to explore whether the company's resiliency program effectively trained CCM workers by comparing content moderators offered the resiliency program to those without accessibility by measuring their resilience and well-being. Therefore, the first research question asked; Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STS), and compassion fatigue found between CCM workers offered the resiliency program than those not offered the program?

The researcher conducted a predictive study assessing differences between two groups, those offered resiliency programming and those without, for CCM workers that were predetermined by the company. The decision of whether specific lines of business were allowed access to the program was solely based upon the preference of the clients of the company; therefore, convenience sampling was used. Data were analyzed within only Quarter 1 for

comparison between the groups [February 2020]. The explanatory variables consist of the resiliency program offering [those with and without access], age, and gender within the hierarchical multilinear regression model. Outcome variables consisted of resiliency using the 10-item Connor Davidson Resilience Scale and well-being-- lower secondary traumatic stress scores, compassion fatigue, and burnout-- using the Professional Quality of Life Scale.

Research Question 2

With less direct oversight of employees due to work from home safety procedures, the company shifted the program's facilitation from in-person skilled groups to online instruction provided by a licensed mental health professional. Further, from the onset, specific elements of the resiliency program, such as the skills-based weekly groups, were voluntary, resulting in a 23% weekly participation rate. Moving into Quarter 3 [July 2020], the procedures shifted, requiring employees to attend a weekly 45-minute resilient skills-based training three times per month. For this reason, the researcher evaluated whether online training could produce effective outcomes for the resiliency and well-being of employees when provided in an online platform with required attendance. Therefore, the second research question asks: Controlling for age and gender, do resilience scores and well-being-- compassion satisfaction, low burnout, and low STS-- scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary?

Hierarchical multilinear regression analysis was conducted on these factors as well to examine for the presence of an interaction between prior frequency of attendance and program attendance policy (optional vs. mandatory) by comparing Quarter two [May] and Quarter three [August] outcome measures of resilience, secondary traumatic stress, compassion fatigue, and

burnout in 2020. Differences in scores of the Connor-Davidson Resilience Scale and the Professional Quality of Life Scale ascertained program effectiveness within both analyses.

Chapter 4

Results

Due to the scarcity of literature regarding efficacious intervention programs for CCM staff that reduce adverse symptomology, the current study evaluated the effectiveness of a resilience program designed explicitly for content moderators and facilitated by mental health clinicians within a company. Thus, the researcher collected archival data across three quarters from a company that employs commercial content moderators to predict whether access to programming could increase psychological resilience and well-being by evaluating scores on the 10-item Connor Davidson Resilience Scale and the Professional Quality of Life Scale; and whether changes to the program attendance policy requiring employees to take part in training groups could predict increases in resilience and well-being.

Therefore, research question one asked, "Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STS), and compassion fatigue found between CCM workers offered the resiliency program than those not offered the program?" To answer the following inquiry, the researcher utilized Quarter 1 data that included content moderation lines of business offered resiliency training and compared scores on the CD-RISC 10 and the ProQOL against business lines not offered resiliency training using hierarchical regression analysis.

Research question two sought to explore whether there was a positive relationship between the frequency of attendance and resilience and well-being following a company mandate to attend groups three times monthly, while also accounting to prior attendance by teammates when attendance was voluntary. The research question asked, "Controlling for age and gender, do resilience and well-being -- compassion satisfaction, low burnout, and low STS --

scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary?" Before the first of July, program attendance was voluntary, and frequency of attendance was as follows; 99.4% attended at least one group monthly, 17.1% frequented two times monthly, 8.7% attended three times monthly, 14.9% attended weekly, and 1% reported not attending at all. To answer the research questions, scores for Quarter 2 were used as a baseline before the mandate and compared with Quarter 3 for resiliency, STS, burnout, and compassion satisfaction.

Power analysis for linear regression was conducted to determine a sufficient sample size using an alpha of 0.05, a power of 0.80, and medium effect size ($f^2 = 0.15$) for Quarter 1 data, recommending the desired sample 226. The sample included 497 teammates, surpassing the minimum sample recommendation. Data comparing Quarters two and three were only able to produce a sample of 361, resulting in medium effect size ($f^2 = 0.15$) for the study population (Faul et al., 2013).

Since different data sets were extracted from various quarters to answer the research questions, demographic characteristics are separated by quarter in Table 2, Table 3, and Table 4; followed by descriptive statistics of the mean and standard deviations (See Table 5), ending with the inferential statistics to include hierarchical multilinear regression analysis to answer each respective research question.

Description of the Sample

The sample consisted of Quarter 1 ($n = 497$), Quarter 2 ($n = 417$), and Quarter 3 ($n = 782$) data (see Table 2). Quarter 1 was used to assess differences in scores on resilience and well-being between CCM staff provided training and those who did not receive training. Quarters 2 and 3 were used to compare voluntary participation in Quarter 2 with mandatory participation in

Quarter 3. Although race and education are listed in the table, the researcher erred on the side of caution by excluding the variables in the current analysis as findings could result in potential hiring biases from companies.

The employees' ages ranged from 19 to 69 and were categorized by the company based upon specific age ranges. For Quarter 1, the most frequently observed age categories were 25-30 and 18-24. For gender, the majority of the sample identified as female. Just under half of the sample included White or Caucasian individuals, aligning with the latest statistics from the United States Census Bureau, which reported that, as of 2019, White or Caucasian individuals accounted for 76.3% of the U.S. population.

Quarters 2 and 3 presented with similar findings, with 18-24 and 25-30 year-old females representing over 50% of the sample, indicating that more than half of the employees working within content moderation for this company are young adult females (See Table 2). In Quarter 3, 62% reported they were Hispanic or Latino, highly elevated above the 18.5% found within the U.S. population (United States Census Bureau, 2019), potentially attributed to the sites' geographical location or job tasks requiring bilingual workers to interpret the content.

Table 2

Sample Demographics

Variables	Q1		Q2		Q3	
	n = 497	%	*n* = 417	%	*n* = 782	%
Age Category						
18-24	128	25.75	78	18.71	146	18.67
25-30	166	33.40	168	40.29	353	45.14
31-35	64	12.88	73	17.51	122	15.60
36-40	58	11.67	40	9.59	68	8.70
41-50	54	10.87	37	8.87	67	8.57

51+	27	5.43	21	5.04	26	3.32
Gender						
Female	285	57.34	233	55.88	427	54.60
Male	212	42.66	184	44.12	355	45.40
Ethnicity						
White/ Caucasian	239	48.09	182	43.65	176	22.51
Hispanic or Latino	125	25.12	159	38.13	481	61.51
Black or African American	42	8.45	49	11.75	81	10.36
Asian	38	7.65	9	2.16	6	0.77
Native Hawaiian or Pacific Islander	3	0.60	3	0.72	5	0.64
American Indian or Alaskan Native	3	0.60	1	0.24	3	0.38
No Answer	47	9.46	14	3.36	30	3.83
Education						
High school degree/equivalent (e.g., GED)	147	29.57	118	28.30	181	23.15
Some college but no degree	181	36.42	193	46.28	348	44.50
Associate's Degree	68	13.68	49	11.75	101	12.92
Bachelor's Degree	64	12.88	44	10.55	102	13.04
Master's Degree	6	1.21	6	1.44	6	1.44
No Answer	26	5.23	7	1.68	0	0.00

Note. Due to rounding errors, percentages may not equal 100%.

It is notable to address that 99% of the sample reported attending at least one group per month of training before Quarter 3's mandate (See Table 3). Combined, those who reviewed graphic or disturbing content daily, whether moderate or severe, accounted for less than half the sample. In contrast, the majority worked with benign content, meaning that less than 10% of

their work reviewed for the month included graphic or upsetting content across all quarters. This indicated that the content level might be a determinant of whether to provide access to training.

Table 3

Frequency Table for Work Context

Variables	Q1		Q2		Q3	
	n = 497	%	*n* = 417	%	*n* = 782	%
Training						
Available	286	57.55	417	100.00	782	100.00
Unavailable	211	42.45	0	0.00	0	0.00
Attendance						
1x a month	188	37.89	233	58.84	0	0.00
2x a month	156	31.45	69	17.44	0	0.00
3x a month	38	7.55	54	12.94	782	100.00
Weekly	112	22.48	58	14.59	0	0.00
Not at all	3	0.06	3	0.83	0	0.00
Program Policy						
Optional	497	100.00	417	100.00	0	0.00
Mandatory	0	0.00	0	0.00	782	100.00
Content						
Low	290	58.35	280	67.15	481	61.51
Moderate	126	25.35	71	17.03	152	19.44
High	81	16.30	66	15.83	149	19.05

Note. Due to rounding errors, percentages may not equal 100%.

There were unequal groups when answering research Quarter 1, with a sample of the control group ($n = 286$) and training group ($n = 211$). A Levene's test was conducted to assess for equality of variance between the groups for all four outcome variables. None presented with statistical significance as presented: resilience, $F(1, 485) = 1.80$, $p = .180$; compassion

satisfaction, $F(1, 491) = 0.33$, $p = .565$; burnout, $F(1, 491) = 1.14$, $p = .285$; and STS, $F(1, 488) = 3.68$, $p = .056$, indicating the assumption of homogeneity was met. For this reason, the entirety of the sample was analyzed.

The same issue arose within the sample comparison between Quarters 2 ($n = 417$) and 3 ($n = 782$). The sizable influence of the unequal groups resulted from the abrupt shift from working onsite to home due to the COVID 19 pandemic. Teammates were unable to access the Google forms where the assessments were located during the first few weeks of the transition in Quarter 2, therefore results were not documented for the Quarter for the majority of the teammates. This left the researcher with only 361 teammates that completed the assessments in both quarters for comparison.

Analysis controlling for the exclusion of the 477 subjects was conducted by use of a Levene's test by comparing the 361 teammates who completed both quarter measurements with the 477 that were unable or attrited. Scores on the Levene's test indicated variance was equal between groups. All outcome variables were non-significant with; resilience, $F(1, 1197) = 2.77$, $p = .096$; compassion satisfaction, $F(1, 1197) = 2.11$, $p = .147$; burnout, $F(1, 1197) = 0.17$, $p = .680$; and STS, $F(1, 1197) = 2.64$, $p = .104$. Moving forward, only the analysis of the 361 subjects was evaluated. See Table 4 and Table 5 the reduced sample for both quarters.

Table 4

Reduced Sample for Quarter 2 and Quarter 3

Variables	Q2		Q3	
	n = 417	%	*n* = 782	%
Age Category				
18-24	68	18.84	68	18.84
25-30	148	41.00	148	41.00

31-35	63	17.45	63	17.45
36-40	33	9.14	33	9.14
41-50	29	8.03	29	8.03
51+	20	5.54	20	5.54
Gender				
Female	202	55.96	202	55.96
Male	159	44.04	159	44.04
Ethnicity				
White/ Caucasian	168	46.54	168	46.54
Hispanic or Latino	127	35.18	127	35.18
Black or African American	45	12.47	45	12.47
Asian	8	2.22	8	2.22
Native Hawaiian or Pacific Islander	2	0.55	2	0.55
American Indian or Alaskan Native	1	0.28	1	0.28
No Answer	22	6.10	22	6.10
Education				
High school degree/equivalent (e.g., GED)	102	28.25	102	28.25
Some college but no degree	174	48.20	174	48.20
Associate's Degree	42	11.63	42	11.63
Bachelor's Degree	37	10.25	37	11.63
Master's Degree	6	1.67	6	1.67
No Answer	102	28.25	102	28.25

Note. Due to rounding errors, percentages may not equal 100%.

Table 5

Reduced Sample for Quarter 2 and Quarter 3

Variables	Q1		Q2	
	n = 361	%	*n* = 361	%
Attendance				
1x a month	196	54.29	0	0.00
2x a month	67	18.56	0	0.00
3x a month	52	14.40	361	100.00
Weekly	44	12.19	0	0.00
Not at all	2	0.55	0	0.00
Program Policy				
Optional	361	100.00	0	0.00
Mandatory	0	0.00	361	100.00
Content				
Low	234	64.82	234	64.82
Moderate	63	17.45	63	17.45
High	64	17.73	64	17.73

Note. Due to rounding errors, percentages may not equal 100%.

Description of Outcome Variables

10-item Connor Davidson Resilience Scale

Resilience was measured using the 10-item Connor Davidson Resilience Scale (CD-RISC 10) for which scores can range from zero to 40. According to Campbell-Sills (2009), general population quartile scores are: 25th % = 29; 50th % = 32; 75th % = 36. The current study population scores varied slightly higher in all quarters at 25th % = 30; 50th % = 34; 75th % = 38 for Quarter 1; and 25th % = 30; 50th % = 35; 75th % = 38 for Quarter 2 and 3. Teammates' mean scores on the CD-RISC-10 were slightly above the general population for all three quarters, with moderate levels of resilience. Means and standard deviations are presented in Table 6.

Table 6

Mean and Standard Deviation for Resilience

Quarter	*N*	Min.	Max.	*M*	S.D.
Quarter 1	487	19.00	40.00	33.56	4.97
Quarter 2	361	18.00	40.00	33.71	5.07
Quarter 3	361	19.00	40.00	33.87	5.00

Professional Quality of Life Scale

The well-being of CCM staff was measured using the Professional Quality of Life Scale (ProQOL), which consists of three subscales that measure compassion satisfaction, employee burnout, and secondary traumatic stress (STS). The scoring manual recommends comparing scores on the ProQOL as a continuous variable; however, the manual does provide a categorical measure with cutoffs for each scale that ranges from scores of 22 or less classified as low, 23 to 41 as moderate, and 42 and more as high, with a possible scoring range for each section from 10 to 50. When interpreting group scores instead of individuals, the ProQOL manual requires the conversion of raw scores to *t*-scores (See Table 7). Mean scores across all three quarters fell within the high range, indicating a high degree of professional satisfaction; however, scores moved just outside the moderate range. CCM staff's scores on the burnout scale of the ProQOL were low across, suggesting that teammates believed they were effective in their work and felt supported to manage their workflow. Finally, scores on the secondary traumatic stress scale were low across all quarters, denoting that employees did not endorse extremely or traumatically stressful events attributed to their work or environment's exposure when evaluating the entire sample.

Table 7

Means and Standard Deviations for Well-being

Variable	*N*	Range	Min.	Max.	*M*	S.D.
Q1 Compassion	493	37.45	24.26	61.71	50.35	9.32
Q1 Burnout	493	43.86	35.49	49.64	49.64	9.49
Q1 Secondary Traumatic Stress	490	42.03	34.10	76.13	49.38	8.92
Q2 Compassion	359	38.52	23.67	62.19	50.94	9.03
Q2 Burnout	360	39.79	35.62	74.41	49.01	9.06
Q2 Secondary Traumatic Stress	360	54.98	34.53	89.51	49.39	9.48
Q3 Compassion	358	41.27	20.91	62.19	50.23	9.54
Q3 Burnout	360	46.25	35.62	81.87	50.25	10.16
Q3 Secondary Traumatic Stress	357	54.98	34.53	89.51	50.16	5.00

Analysis for Research Questions

Research question one asked, "Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STS), and compassion fatigue found between CCM workers offered the resiliency program than those not offered the program?" To answer the preceding inquiry, the researcher utilized Quarter 1 data to assess differences between CCM workers provided the resilience training program to those not offered training by conducting a three-step hierarchical linear regression analysis on each dependent variable-- resilience, compassion satisfaction, burnout, and secondary traumatic stress. Within all models, age categories were entered as the predictor variable in step 1, gender in step 2, and training in step 3

into the null model. This type of analysis explains the outcome of a criterion variable using a set of predictor variables (Petrocelli, 2003, p. 9).

Research question two asked, “Controlling for age and gender, do resilience and well-being-- low burnout, compassion satisfaction, and low STS-- scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary? To answer the preceding inquiry, the researcher compared Quarter 2 to Quarter 3 data to assess potential increases in resilience and well-being by conducting a four-step hierarchical linear regression on each dependent variable-- resilience, compassion satisfaction, burnout, and secondary traumatic stress. Similar to question 1, age category was entered as the predictor variable in step 1 and gender in step 2, frequency of attendance replaced step 3, and step 4 included program policy changes.

Before presenting the results, linear regression models required meeting eight assumptions to ensure accurate predictions, that the regression model fit the data, and that the independent variables explained variations of the dependent variable for both datasets. For variables that met all eight assumptions, each linear regression results were presented concurrently with their respective research question. The order of results for each model was as follows; resilience outcomes were presented first, followed by compassion satisfaction, burnout, and secondary traumatic stress. Finally, a post hoc analysis for each outcome variable was provided for those found to have statistical significance.

Test of Assumptions

The first step of a hierarchical regression analysis includes testing to ensure that results are valid and if conducting this specific statistical test was appropriate. While there are eight assumptions tested, it is not uncommon for the data to violate one or more assumptions. This

could require deciding to make corrections to the data, proceed even if the violation stands, or choose alternative analysis. Diagnostics applied to the model were reported to ensure quality control and that significant findings were valid.

The first two assumptions pertaining to research design required a continuous outcome variable and two or more predictor variables that could be either continuous or categorical. Therefore, research design assumptions were met for this study, as the outcome variables consisting of resilience, compassion satisfaction, burnout, and STS were all continuous. Furthermore, the predictor variables of age, gender, and training for question 1 and age, gender, frequency of attendance, and program policy for question 2, were all classified as categorical, sufficing the standard for assumptions one and two. The following six assumptions were tested using Statistical Product and Service Solutions (SPSS) software and Intellectus Statistics software to cross analyze for accuracy and ensure that the data fit the regression models. Each of the following six findings for the analysis was presented with further explanation.

Assumption three required that the observations were not related to one another or clustered together, termed independence of the observations. Autocorrelations maintained within the range of 0 to 4 were detected by using the Durbin-Watson statistic. All outcome variables for question 1 were met as independence of residuals was found based upon the Durbin-Watson statistic of 1.57 for resilience, 1.65 for compassion satisfaction, and 1.20 for burnout. A statistic of .003 was found for secondary traumatic stress, suggesting a potential correlation between residuals. Similarly, for research question 2, there was independence of residuals based upon the Durbin-Watson statistic of 1.45 for resilience, 1.30 for compassion satisfaction, 0.541 for burnout, and 1.23 for STS.

Assumption four tests for linearity, and assumption five tests for homoscedasticity by plotting the studentized residuals against the unstandardized predicted values. There needed to be a linear relationship between the predictor and outcome variables. Homoscedasticity assumed that there was equal variance over the values of the predictor variables. This meant that the scatter of points formed a band and did not rise or fall with increases in the predicted values. Results for each variable within research questions one is presented in Figure 1 or resilience, Figure 2 for compassion satisfaction, Figure 3 for burnout, and Figure 4 for secondary traumatic stress. Those that are associated with research question 2 are displayed within Figure 5 for resilience, for Figure 6 compassion satisfaction, Figure 7 for burnout, Figure 8 for secondary traumatic stress.

Figure 1

Test of Homoscedasticity, Resilience- Research Question 1

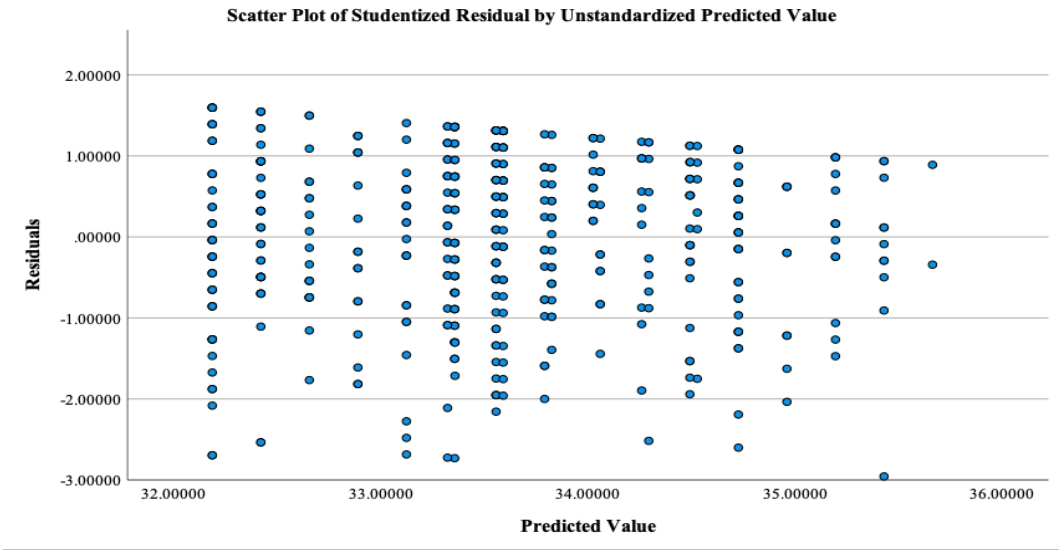


Figure 2

Test of Homoscedasticity, Compassion Satisfaction- Research Question 1

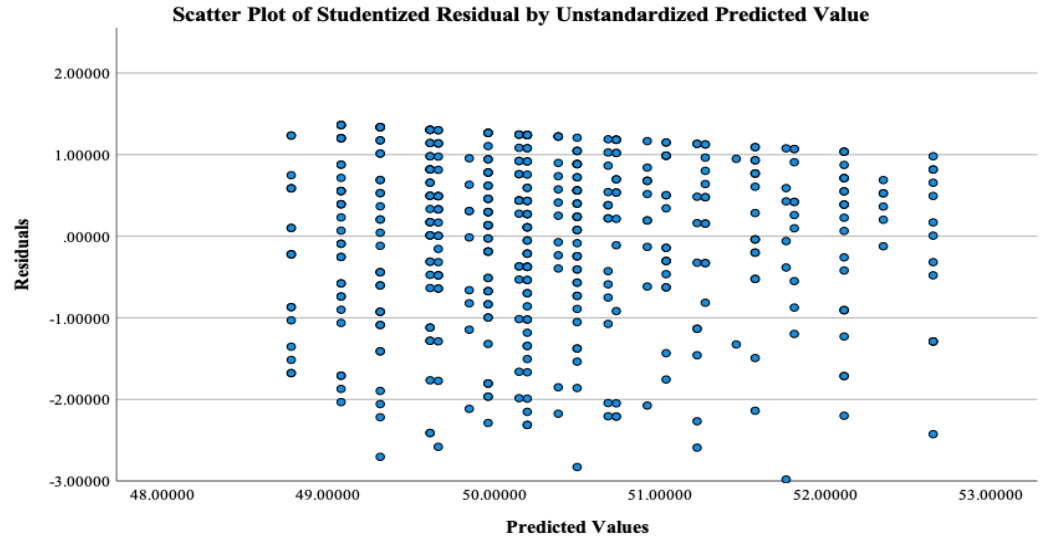


Figure 3

Test of Homoscedasticity, Burnout- Research Question 1

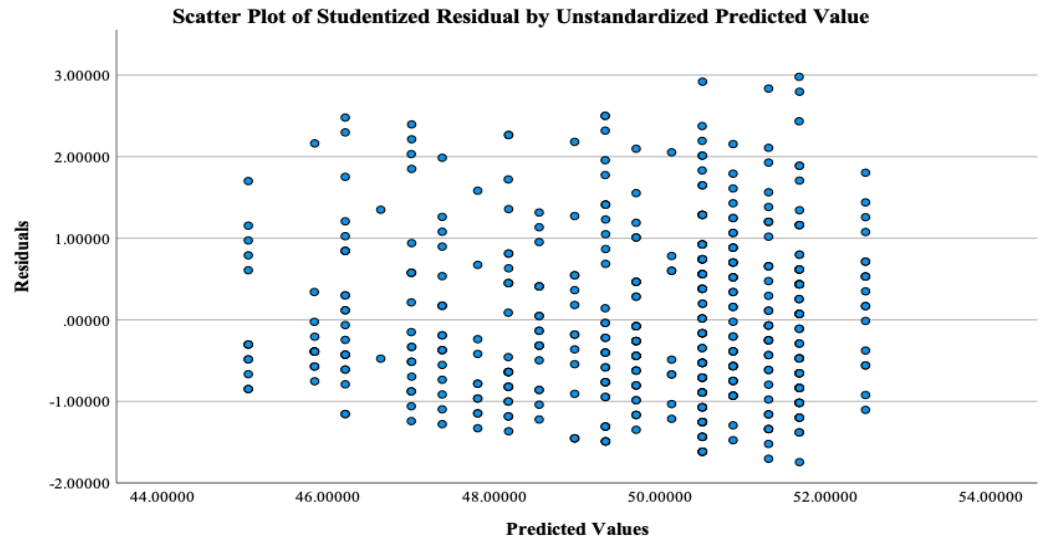


Figure 4

Test of Homoscedasticity, STS- Research Question 1

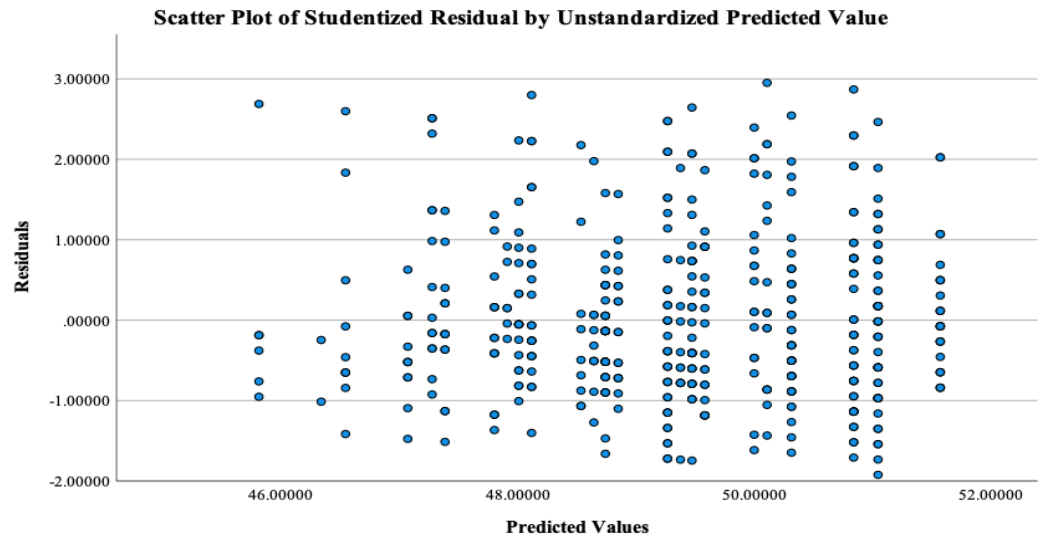


Figure 5

Test of Homoscedasticity, Resilience- Research Question 2

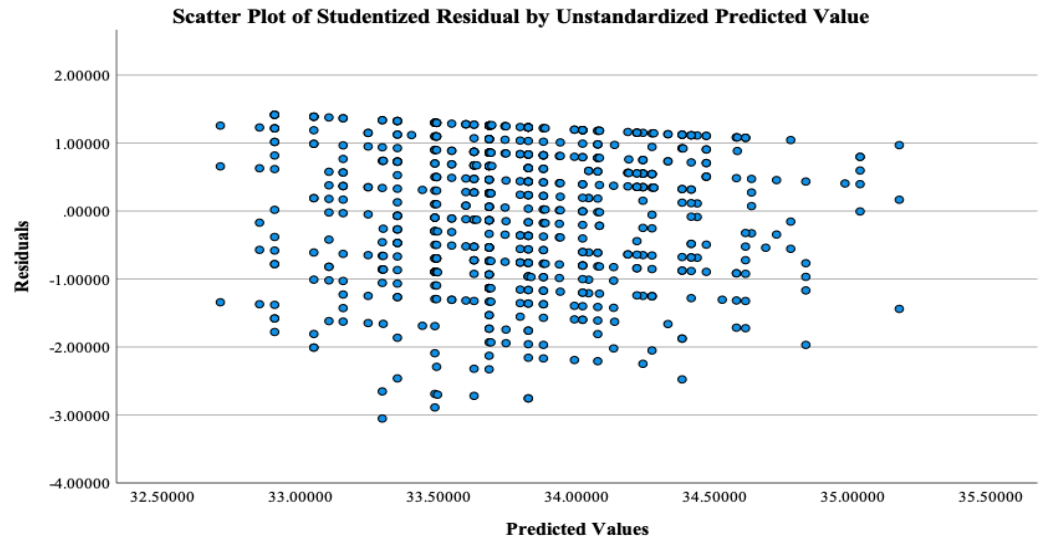


Figure 6

Test of Homoscedasticity, Compassion Satisfaction- Research Question 2

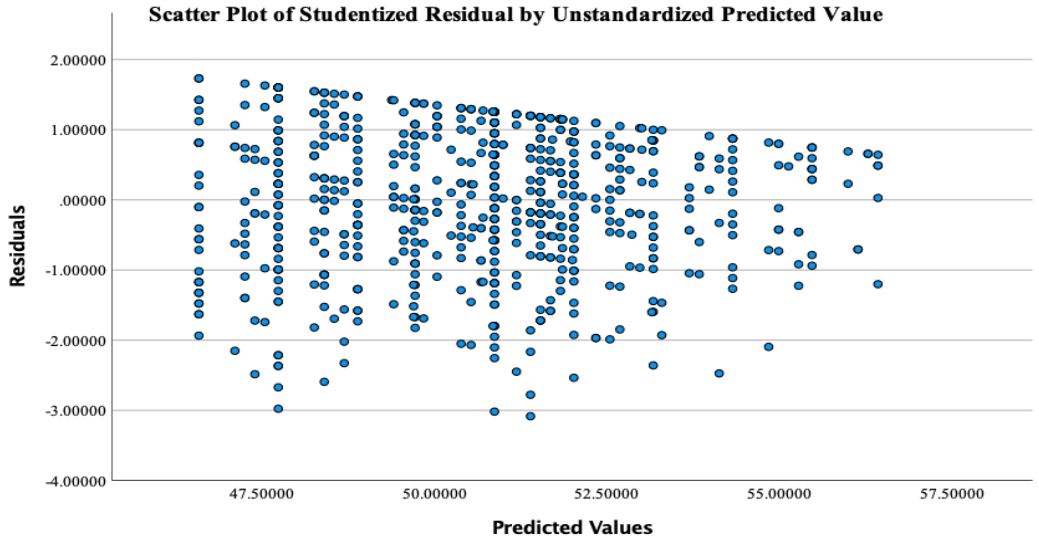


Figure 7

Test of Homoscedasticity, Burnout- Research Question 2

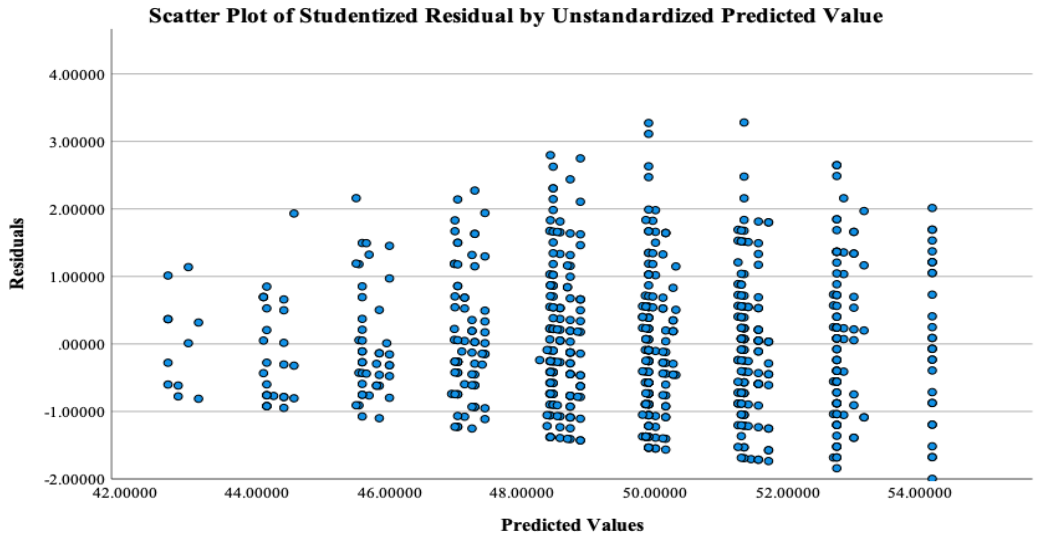
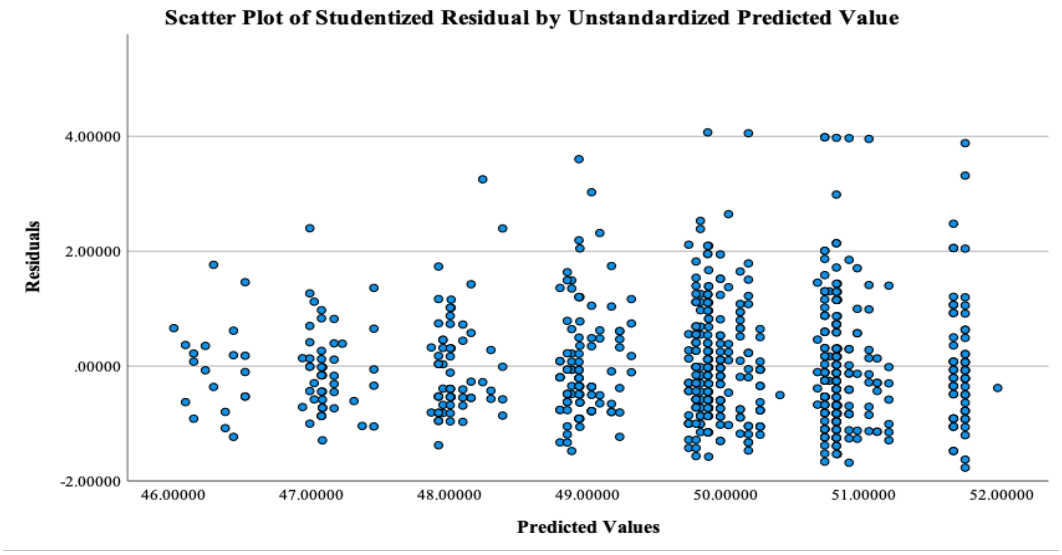


Figure 8

Test of Homoscedasticity, STS- Research Question 2



Because the predictor variables are categorical and the scatterplots are difficult to distinguish whether distributions are similar for research question 1, Levene's test was conducted assessing for homoscedasticity on all outcome variables by predictor variables. The homogeneity of variance assumption required the variance of the outcome scores to be approximately equal at different points of the predictor variable. Median centering was used for the calculations, and an alpha of 0.05 was used for the interpretation.

The result of Levene's test for resilience was not significant, $F(23, 463) = 0.99$, $p = .471$, nor compassion satisfaction, $F(23, 469) = 0.83$, $p = .694$, or burnout, $F(23, 469) = 1.4$, $p = .694$. However, Levene's test for secondary traumatic stress was significant, $F(23, 466) = 1.54$, $p = .053$, indicating that the assumption of homogeneity of variance was violated for STS. Moving forward, STS was no longer considered for hierarchical regression analysis. Outcome variables for research question 2 did not violate any of the assumptions of homogeneity as none presented with significance: resilience, $F(63, 658) = 1.04$, $p = .395$; STS, $F(63, 658) = 0.76$, $p = .910$,

burnout, $F(63, 658) = 0.94$, $p = .613$, compassion satisfaction, $F(63, 658) = 1.08$, $p = .326$; and STS, $F(63, 648) = 0.82$, $p = .840$.

Assumption six tested for the presence of multicollinearity, meaning that the predictor variables were highly correlated with one another. Variance Inflation Factors (VIFs) greater than five indicate the predictor variables have a strong linear relationship with the other predictors, indicating the regression may be biased. Furthermore, Tolerance below 0.2 indicates multicollinearity, indicating that the variable's regression coefficient is likely unreliable. All predictors for research question 1 had VIFs less than 5, and Tolerance greater than .02, meaning they met the assumptions (See Table 8).

Table 8

Variance Inflation Factors for Each Step for Research Question 1

Variable	Tolerance	VIF
Resilience		
Step 1		
Age category	1.000	1.000
Step 2		
Age category	0.990	1.001
Gender	0.990	1.001
Step 3		
Age category	0.998	1.002
Gender	0.999	1.002
Training	0.999	1.001
Compassion		
Step 1		
Age category	1.000	1.000
Step 2		

Age category	0.999	1.001
Gender	0.999	1.001
Step 3		
Age category	0.998	1.002
Gender	0.999	1.001
Training	0.999	1.001
Burnout		
Step 1		
Age category	1.000	1.000
Step 2		
Age category	0.999	1.001
Gender	0.999	1.001
Step 3		
Age category	0.998	1.002
Gender	0.999	1.001
Training	0.999	1.001

Multicollinearity was not observed for any of the outcome variables for research question 2 as well. As presented in Table 9, all predictors in the model have VIFs less than 5, and Tolerance greater than .02 for resilience. This indicates that the regression coefficient for the variables was reliable and interpretable.

Table 9

Variance Inflation Factors for Each Step for Research Question 2

Variable	Tolerance	VIF
Resilience		
Step 1		
Age category	1.00	1.00
Step 2		
Age category	1.00	1.00
Gender	1.00	1.00
Step 3		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	1.00	1.00
Step 4		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	0.47	2.15
Policy Change	0.47	2.15
Compassion		
Step 1		
Age category	1.00	1.00
Step 2		
Age category	1.00	1.00
Gender	1.00	1.00
Step 3		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	1.00	1.00
Step 4		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	0.47	2.15
Burnout		

Step 1		
Age category	1.00	1.00
Step 2		
Age category	1.00	1.00
Gender	1.00	1.00
Step 3		
Age category	1.00	1.00
Gender	1.00	1.00
Training	1.00	1.00
Step 4		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	0.47	2.15
Policy Change	0.47	2.15
STS		
Step 1		
Age category	1.00	1.00
Step 2		
Age category	1.00	1.00
Gender	1.00	1.00
Step 3		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	1.00	1.00
Step 4		
Age category	1.00	1.00
Gender	1.00	1.00
Attendance	0.47	2.15
Policy Change	0.47	2.15

Assumption seven required ensuring there were no significant outliers that negatively affected the regression equation by reducing the predictive accuracy of the results. When assessing for high leverage and influential points, ten usual cases were identified for resiliency, five for compassion satisfaction and burnout, and seven for secondary traumatic stress related to

the outcome variables within research question 1. For research question 2, five usual cases were identified for compassion satisfaction and burnout, and 16 for secondary traumatic stress when calculating Studentized residuals, and the absolute values were plotted against the observation numbers. Observations with a Studentized residual that exceeded 3.00 according to the Cook's distance were excluded from the data analysis, as the cases would have a significant influence on the results of the model.

The last assumption tested for normality, or that the residuals were approximately normally distributed. Normality was evaluated for each model using a Q-Q scatterplot that compares the distribution of the residuals with a normal distribution. Figures for normality of each outcome variable are presented below for research questions 1 (See Figure 9, Figure 10, Figure 11, and Figure 12) and research question 2 (Figure 13, Figure 14, Figure 15, and Figure 16). Normality is assumed if the points form a reasonably straight line, which is indicated in each figure.

Figure 9

Q-Q scatterplot for normality, Resilience for Research Question 1

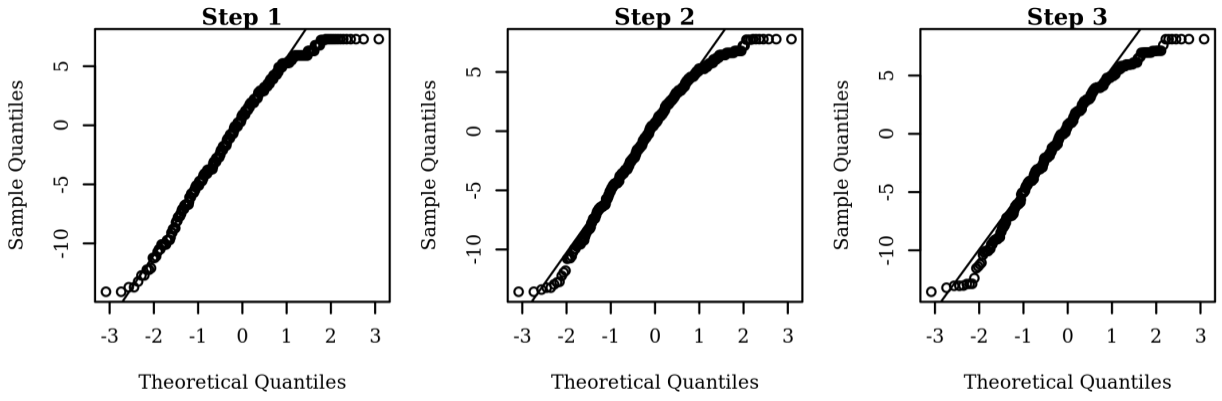


Figure 10

Q-Q scatterplot for normality, Compassion Satisfaction for Research Question 1

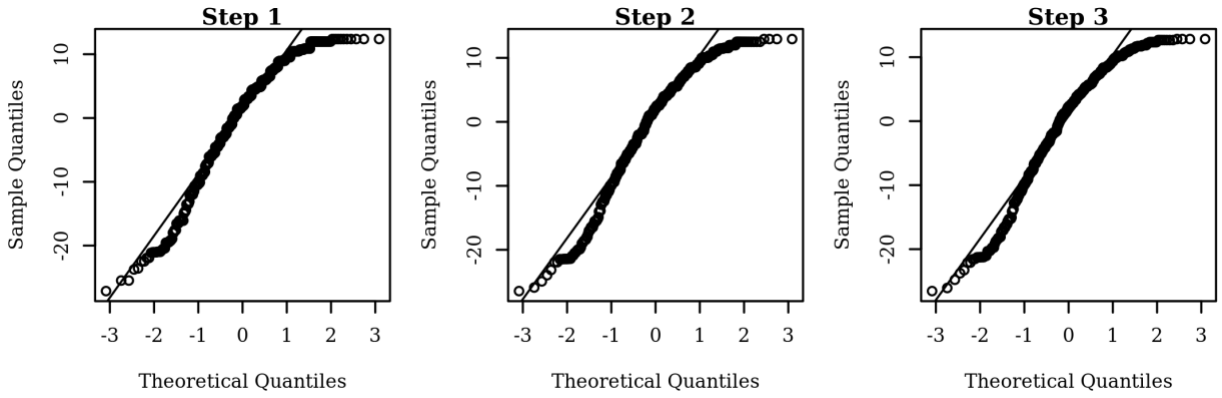


Figure 11

Q-Q scatterplot for normality, Burnout for Research Question 1

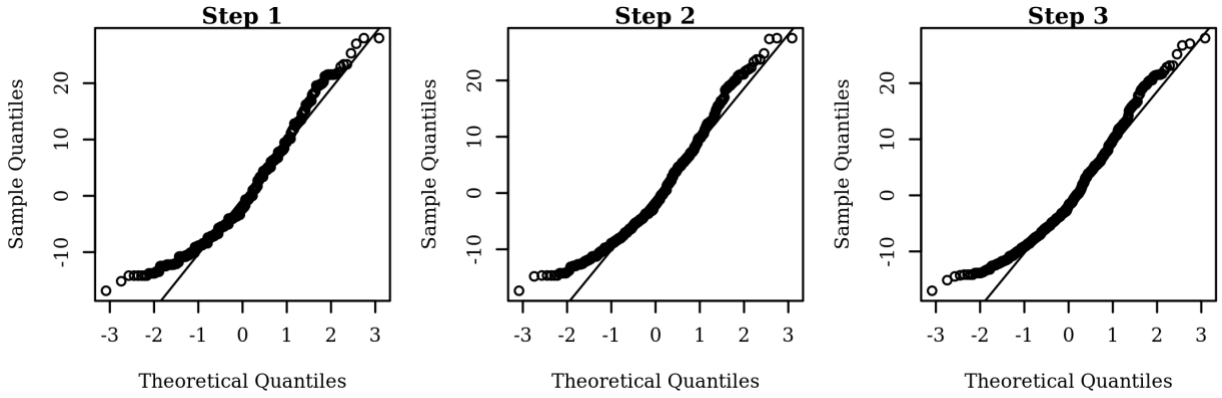


Figure 12

Q-Q scatterplot for normality, STS for Research Question 1

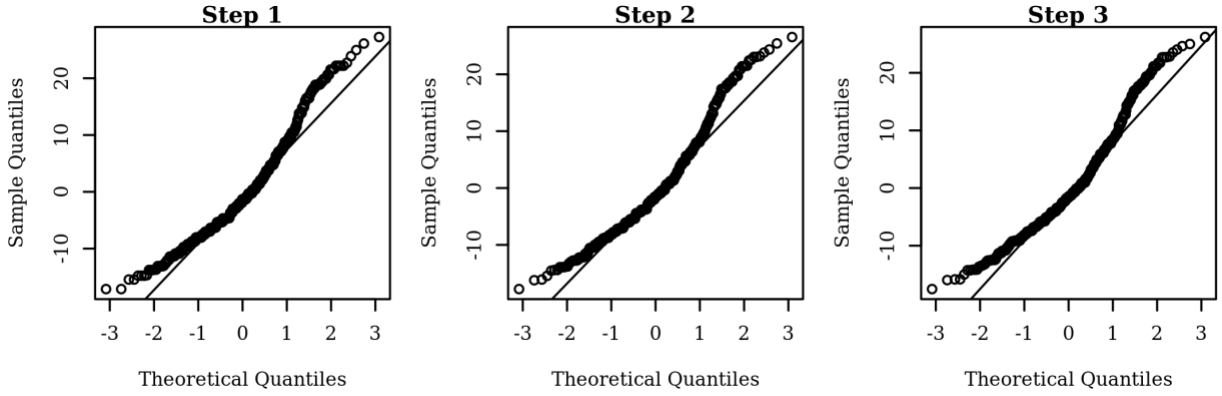


Figure 13

Q-Q scatterplot for normality, Resilience for Research Question 2

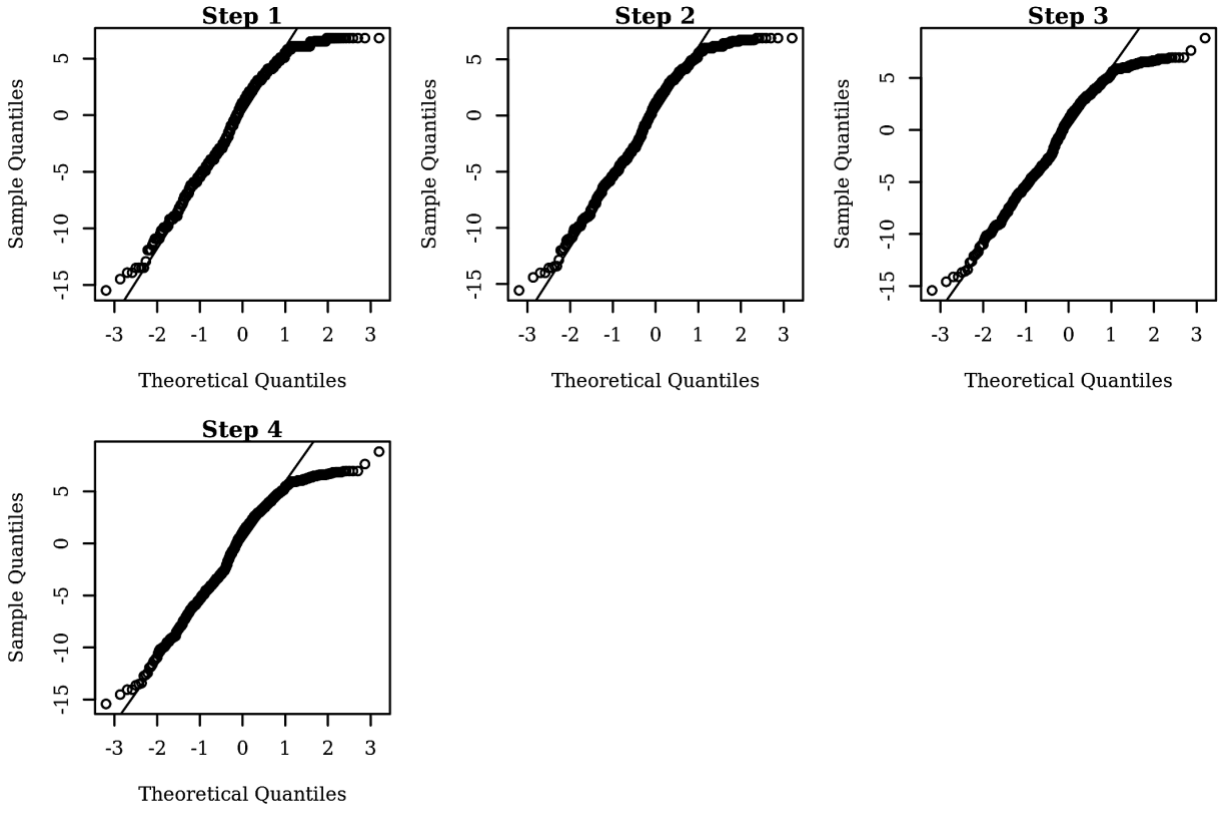


Figure 14

Q-Q scatterplot for normality, Compassion Satisfaction for Research Question 2

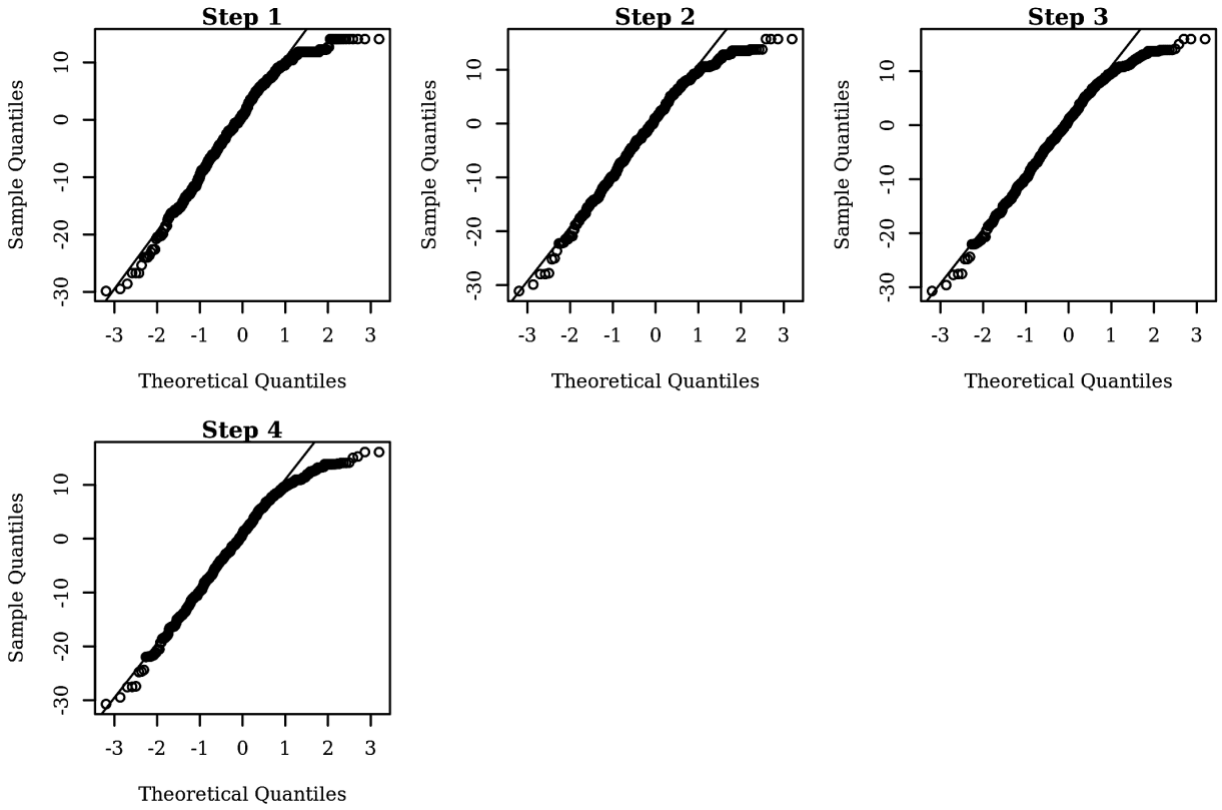


Figure 15

Q-Q scatterplot for normality, Burnout for Research Question 2

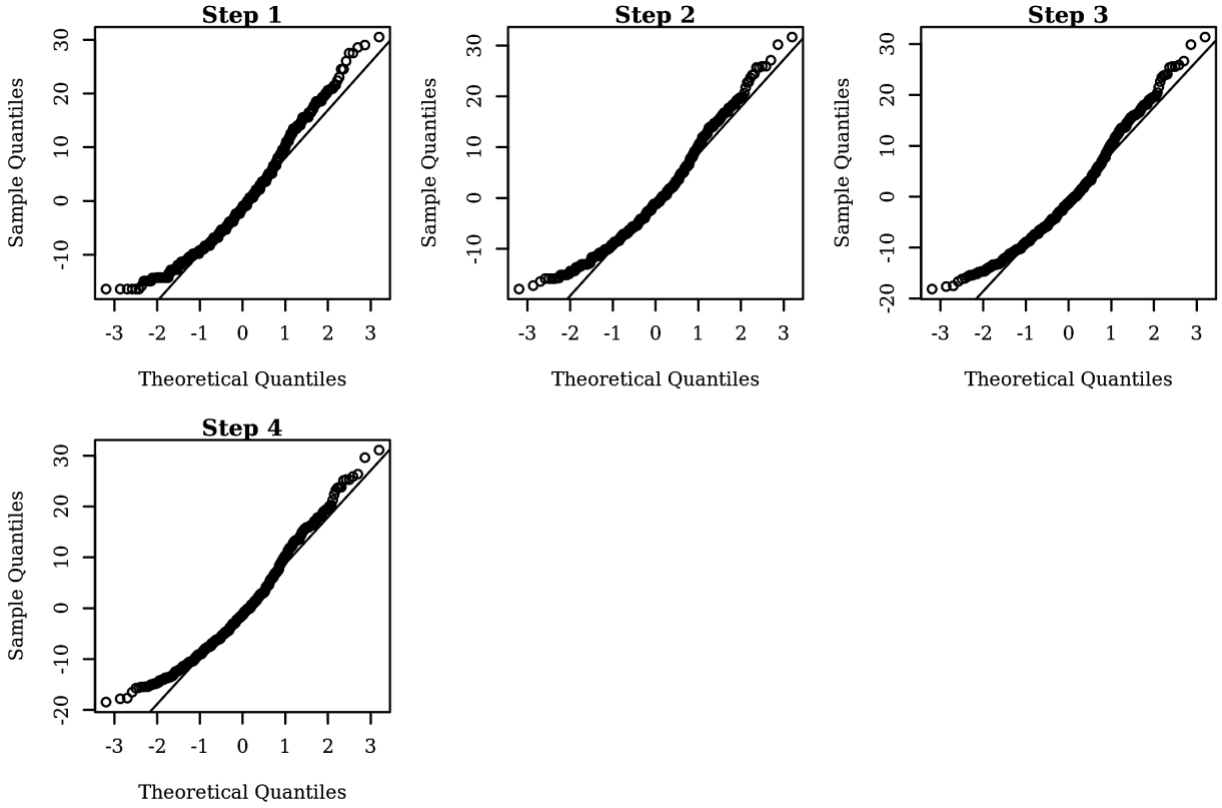
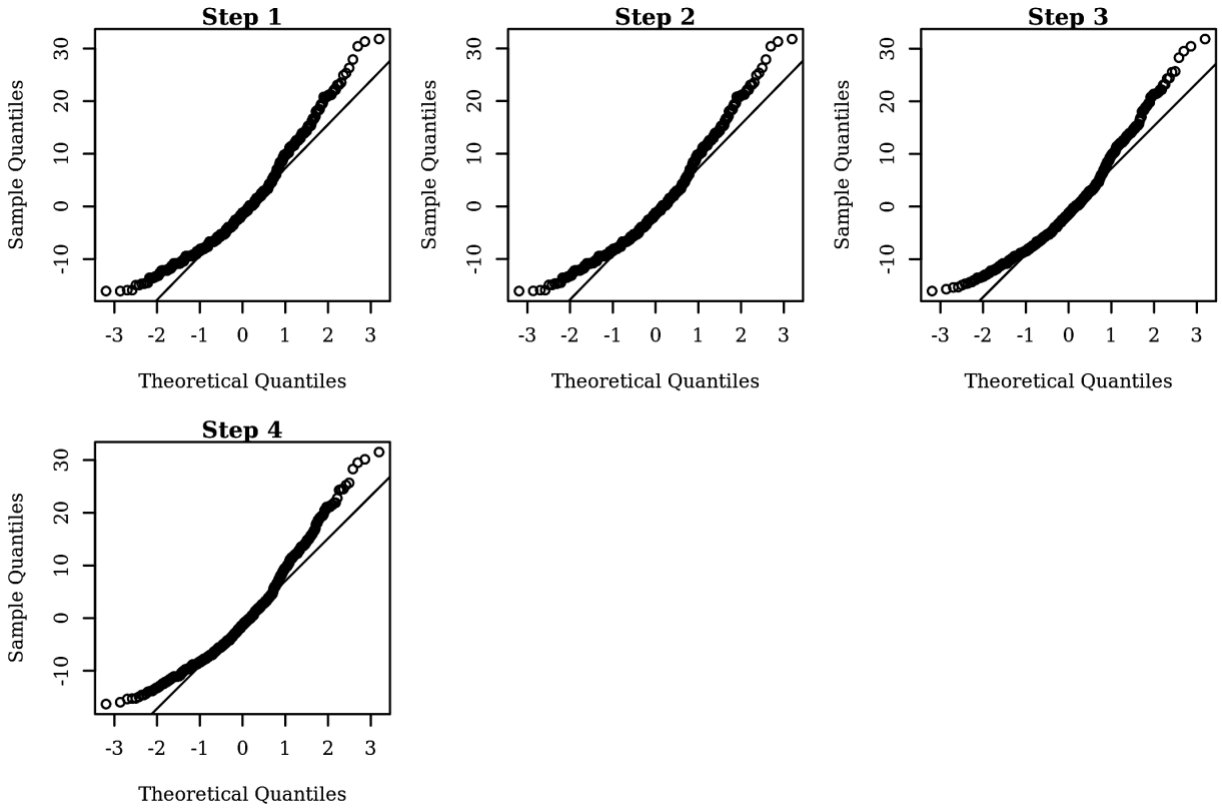


Figure 16

Q-Q scatterplot for normality, STS for Research Question 2



Results Research Question 1

There were four hierarchical multiple regressions that were run to determine if the accessibility to resilience training improved four prediction dependent variables; resilience, compassion satisfaction, burnout, and secondary traumatic stress when controlling for age and gender alone. All eight assumptions were met for the hierarchical regression model for resilience, compassion satisfaction, and burnout results for each model, as discussed previously. Each step in the hierarchical regression was compared to the previous step using *F*-tests and set at the alpha of 0.05. The coefficients of the model in the final step were interpreted.

Resilience Findings

The hierarchical regression model predicting the outcome variable for resilience by use of the 10-item CD-RISC rejected the null hypothesis as the *F*-test for Step 3, which included the addition of resilience training, was significant, indicating that when resilience training was provided, it predicted increases in resilience scores when compared to the control group. However, the incremental increase in the model was small (ΔR2 = 0.024), indicating only a 2% effect size (See Table 10). Similarly, the inclusion of gender in Step 2 was significant. Once again, the incremental increase in the model was small (ΔR2 = 0.015), indicating only a 1.5% effect size. Age did not account for a significant amount of variation in resilience as the *F*-test for Step 1 was not significant.

Table 10

Model Comparisons for Variables Predicting Resilience Study 1

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.004	5	486	2.11	.147	0.002
Step 2	0.019	2	485	4.79	.009	0.015
Step 3	0.030	1	484	5.06	.002	0.024

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

When assessing the directional relationship between the factors, there were statistically significant differences found between males and females, with increases in the mean value of resilience for males found at 1.15 units on average than females. Further, access to resilience training significantly predicted resilience. Based on this sample, this suggests that those provided training fared better than those without, with increases in the mean values found at 1.02 units on

average. Age, however, was not a significant predictor of burnout. The summary of the full results is displayed in Table 11.

Table 11

Hierarchical Regression Analysis for Variables Predicting Resilience Study 1

Variable	*B*	*SE*	95% CI		β	*p*
			LL	UL		
Step 1						
(Intercept)	32.71	0.45	31.83	33.58	0.00	< .001
Age 25-30	1.38	0.59	0.23	2.54	0.13	.019
Age 31-35	0.07	0.76	-1.42	1.57	0.01	.923
Age 36-40	1.78	0.80	0.21	3.36	0.11	.027
Age 41-50	0.52	0.81	-1.08	2.12	0.03	.523
Age 51 and over	2.03	1.05	-0.03	4.10	0.09	.054
Step 2						
(Intercept)	32.23	0.48	31.28	33.17	0.00	< .001
Age 25-30	1.34	0.59	0.19	2.50	0.13	.022
Age 31-35	0.05	0.76	-1.44	1.54	0.00	.950
Age 36-40	1.72	0.80	0.15	3.28	0.11	.032
Age 41-50	0.56	0.81	-1.03	2.15	0.04	.487
Age 51 and over	2.17	1.05	0.11	4.23	0.10	.039
Gender- Male	1.16	0.45	0.27	2.05	0.12	.011
Step 3						
(Intercept)	31.88	0.50	30.88	32.87	0.00	< .001
Age 25-30	1.17	0.59	0.01	2.33	0.11	.047
Age 31-35	0.01	0.76	-1.48	1.49	0.00	.994
Age 36-40	1.61	0.80	0.05	3.17	0.10	.044
Age 41-50	0.51	0.81	-1.07	2.10	0.03	.523
Age 51 and over	2.22	1.04	0.18	4.27	0.10	.033

Gender- Male	1.15	0.45	0.26	2.03	0.11	.011
Training	1.02	0.45	0.13	1.91	0.10	.025

Well-being Findings

Compassion satisfaction was measured by the use of analyzing the Compassion scale within the ProQOL and was the only other predictor variable aside from burnout evaluated further as secondary traumatic stress was excluded from reporting results for failing to pass the assumptions of homoscedasticity. Compassion satisfaction results supported the null hypothesis as access to training did not significantly predict increased compassion satisfaction, however nor did age or gender. The results are presented in Table 12.

Table 12

Model Comparisons for Variables predicting Compassion Satisfaction Study 1

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.01	1	491	3.92	0.058	0.006
Step 2	0.01	1	490	1.10	0.082	0.006
Step 3	0.01	1	489	0.13	0.163	0.004

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

Similar to compassion satisfaction, the hierarchical regression model predicting the outcome variable for burnout by use of the Burnout scale on the ProQOL supported the null hypothesis. Only the *F*-test for Step 1, regarding age differences, was a significant predictor found in the model, indicating that only age accounted for a significant amount of variation in Burnout (See Table 13). Upon further analysis R^2 of 0.004, the incremental increase in the model was scarce at 4% effect size.

Table 13

Model Comparisons for Variables predicting Burnout Study 1

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.04	5	487	4.10	.001	0.03
Step 2	0.04	1	486	1.04	.309	0.03
Step 3	0.04	1	485	1.31	.253	0.03

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

There appears to be an inverse relationship with age and burnout with younger individuals aged 18-24 endorsing significantly higher burnout scores than their older counterparts when conducting post hoc analysis. There were reductions of 2.87 units on average of burnout between 18-24 to 25-30, and a steady trending decrease as age increased, with 51 and over age category displaying the lowest level of burnout at 6.57 units on average compared to those within the 18-24-year age category (See Table 14).

Table 14

Hierarchical Regression Analysis for Variables Predicting Burnout Study 1

Variable	*B*	*SE*	95% CI		β	*p*
			LL	UL		
Step 1						
(Intercept)	52.35	0.83	50.72	53.98	0.00	< .001
Age 25-30	-2.69	1.10	-4.85	-0.52	-0.13	.015
Age 31-35	-3.09	1.44	-5.92	-0.26	-0.11	.032
Age 36-40	-4.64	1.48	-7.55	-1.73	-0.16	.002
Age 41-50	-4.63	1.53	-7.63	-1.63	-0.15	.003
Age 51 and over	-6.73	1.98	-10.62	-2.84	-0.16	< .001
Step 2						

(Intercept)	51.98	0.90	50.21	53.76	0.00	< .001
Age 25-30	-2.71	1.10	-4.88	-0.55	-0.14	.014
Age 31-35	-3.12	1.44	-5.95	-0.29	-0.11	.031
Age 36-40	-4.70	1.48	-7.61	-1.79	-0.16	.002
Age 41-50	-4.60	1.53	-7.60	-1.60	-0.15	.003
Age 51 and over	-6.63	1.98	-10.52	-2.73	-0.16	< .001
Gender- Male	0.87	0.85	-0.81	2.55	0.05	.309
Step 3						
(Intercept)	51.64	0.95	49.77	53.51	0.00	< .001
Age 25-30	-2.87	1.11	-5.05	-0.69	-0.14	.010
Age 31-35	-3.16	1.44	-5.99	-0.33	-0.11	.029
Age 36-40	-4.79	1.48	-7.70	-1.87	-0.16	.001
Age 41-50	-4.64	1.53	-7.64	-1.64	-0.15	.003
Age 51 and over	-6.57	1.98	-10.47	-2.68	-0.16	< .001
Gender- Male	0.87	0.85	-0.81	2.54	0.05	.310
Training	0.98	0.86	-0.70	2.67	0.05	.253

Results for Research Question 2

To answer research question two, a four-step hierarchical linear regression was conducted on four separate prediction dependent variables; resilience, compassion satisfaction, burnout, and secondary traumatic stress, to determine if requiring participants to attend weekly resilience training groups could predict increased outcomes on resilience and well-being scores above age, gender, and prior rate of attendance alone. The researchers assumed that consistent instruction pertaining to coping strategies weekly might result in positive effects. Within all models, age category was entered as the predictor variable step 1, step 2 as gender, step 3 ad frequency of attendance, and quarter as step 4 into the null model. Results of the hierarchical linear regression for resilience are discussed further. The eight assumptions were tested and met for the model.

Similar to research question 1, each step in the hierarchical regression was compared to the previous step using *F*-tests with an alpha set at 0.05. The coefficients of the model in the final step were interpreted.

Resilience Findings

The study's results did not reach statistical significance for age, gender, frequency of attendance, or quarter for resilience. It is important to note that the mean for quarter two was within the moderate level for resilience according to the CD-RISC 10, making scores between quarter 2 and 3 difficult to differentiate whether increased training was beneficial. For this study's purpose, the alternative hypothesis; Controlling for age and gender, resilience scores will increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary, was not supported. Scores did not significantly improve following increased attendance three times monthly (See Table 15).

Table 15

Model Comparisons for Variables Predicting Resilience for Study 2

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.003	1	718	2.19	.139	0.002
Step 2	0.003	1	717	1.17	.311	0.000
Step 3	0.006	1	716	1.54	.202	0.002
Step 4	0.008	1	715	1.41	.228	0.002

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

Well-being Findings

Compassion satisfaction was measured by the use of analyzing the Compassion scale within the ProQOL, and results supported the null hypothesis as increased participation by the

result of mandated attendance, when comparing Quarter 2 and 3, did not predict increases in compassion satisfaction. Similar results were found for prior attendance frequency. Results indicate that attending training one time monthly appears to be just as efficient in predicting compassion satisfaction as attending three times monthly. Age and gender appear to predict compassion satisfaction within this model, as results were statistically significant; however, age and gender accounted for low amounts of variance. Incremental increases in the model were small (ΔR2 = 0.03) for gender indicating an effect size of only 3%, and 2% effect size for age (ΔR2 = 0.03). Please see Table 16 for reference.

Table 16

Model Comparisons for Variables predicting Compassion Satisfaction in Study 2

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.03	5	713	4.96	< .001	0.03
Step 2	0.06	1	712	17.99	< .001	0.02
Step 3	0.06	4	708	0.36	.840	0.00
Step 4	0.06	1	707	0.51	.477	0.00

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

Compassion satisfaction appears to share a direct positive relationship with age, supporting prior research that compassion satisfaction increases as individuals age (Johnson et al., 2017; Mauno et al., 2013). Peculiarly, compassion satisfaction scores diminished in the sample within the age category of 31-35, indicating that an anomaly was potentially transpiring, such as family responsibilities during COVID 19, that may have reduced scores. Differentiating from study 1, males presented with higher scores on compassion satisfaction than females providing more support for a potential, influential event occurring within the time period the

results were collected that may account for the discrepancy (See Table 17).

Table 17

Hierarchical Regression Analysis, Study 2 Compassion Predictor Variables

Variable	*B*	*SE*	95% CI		β	*p*
			LL	UL		
Step 1						
(Intercept)	48.12	0.80	46.56	49.69	0.00	< .001
Age Category 25-30	2.26	0.96	0.37	4.16	0.12	.019
Age Category 31-35	1.81	1.15	-0.44	4.07	0.07	.115
Age Category 36-40	4.02	1.39	1.28	6.75	0.12	.004
Age Category 41-50	4.67	1.46	1.81	7.53	0.14	.001
Age Category 51 and over	6.98	1.67	3.70	10.26	0.17	< .001
Step 2						
(Intercept)	49.42	0.85	47.76	51.09	0.00	< .001
Age Category 25-30	2.19	0.95	0.31	4.06	0.11	.022
Age Category 31-35	1.93	1.14	-0.30	4.16	0.08	.090
Age Category 36-40	3.96	1.38	1.25	6.66	0.12	.004
Age Category 41-50	4.73	1.44	1.91	7.56	0.14	.001
Age Category 51 and over	7.00	1.65	3.75	10.24	0.17	< .001
Gender- Male	-2.92	0.69	-4.28	-1.57	-0.15	< .001
Step 3						
(Intercept)	50.09	1.10	47.93	52.26	0.00	< .001
Age Category 25-30	2.25	0.96	0.36	4.14	0.12	.020
Age Category 31-35	2.02	1.14	-0.23	4.26	0.08	.079
Age Category 36-40	4.07	1.39	1.34	6.79	0.12	.003
Age Category 41-50	4.75	1.45	1.90	7.59	0.14	.001
Age Category 51 and over	7.12	1.66	3.86	10.38	0.17	< .001
Gender- Male	-2.92	0.69	-4.28	-1.56	-0.15	< .001

Attendance 2x a month	-0.50	1.46	-3.36	2.36	-0.01	.731
Attendance 3x a month	-0.95	0.89	-2.70	0.81	-0.05	.291
Attendance Not at all	-1.15	1.30	-3.71	1.41	-0.04	.378
Attendance Weekly	0.31	3.19	-5.95	6.57	0.00	.923
Step 4						
(Intercept)	50.10	1.10	47.94	52.27	0.00	< .001
Age Category 25-30	2.24	0.96	0.35	4.13	0.12	.020
Age Category 31-35	2.02	1.15	-0.23	4.27	0.08	.078
Age Category 36-40	4.06	1.39	1.34	6.79	0.12	.004
Age Category 41-50	4.74	1.45	1.89	7.59	0.14	.001
Age Category 51 and over	7.05	1.66	3.78	10.32	0.17	< .001
Gender- Male	-2.93	0.69	-4.29	-1.56	-0.15	< .001
Attendance 2x a month	-0.50	1.46	-3.36	2.36	-0.01	.732
Attendance 3x a month	-0.27	1.31	-2.84	2.30	-0.01	.838
Attendance Not at all	-1.15	1.31	-3.71	1.41	-0.04	.378
Attendance Weekly	0.30	3.19	-5.96	6.56	0.00	.924
Following Mandate	-0.82	1.16	-3.09	1.45	-0.04	.477

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

The hierarchical regression model predicting the outcome variable for burnout found similar findings to compassion satisfaction, supporting the null hypothesis. The *F*-test for prior frequency of attendance and mandating attendance, did not present with statistical significance. Only age and gender were significant predictors of burnout; however, once again, with low variance explaining the variable. Incremental increases in the model were small ($\Delta R2 = 0.06$) for gender indicating an effect size of only 6%, and 2% effect size for age ($\Delta R2 = 0.02$). Please see Table 18 for reference.

Table 18

Model Comparisons for Variables predicting Burnout in Study 2

Model	R^2	df_{mod}	df_{res}	F	p	ΔR^2
Step 1	0.06	5	715	8.52	< .001	0.06
Step 2	0.08	1	714	15.95	< .001	0.02
Step 3	0.08	4	710	0.78	.537	0.00
Step 4	0.08	1	709	2.12	.146	0.00

Note. Each Step was compared to the previous model in the hierarchical regression analysis.

Results found similar findings to compassion satisfaction within the age category of 31-35, presenting with increases in burnout when compared to all other age groups, yet significant reductions as age increases in all other age groups (See Table 19). Findings further support the potential for an extraneous variable explaining the divergence. Gender presented with an inverted relationship with compassion satisfaction, as males presented with higher burnout levels than females.

Table 19

Hierarchical Regression Analysis, Study 2 Burnout Predictor Variables

Variable	*B*	*SE*	95% CI		β	*p*
			LL	UL		
Step 1						
(Intercept)	52.01	0.81	50.43	53.59	0.00	< .001
Age Category 25-30	-2.13	0.97	-4.04	-0.23	-0.11	.028
Age Category 31-35	-0.58	1.16	-2.85	1.69	-0.02	.615
Age Category 36-40	-5.65	1.40	-8.41	-2.90	-0.17	< .001
Age Category 41-50	-6.18	1.47	-9.05	-3.30	-0.18	< .001

Age Category 51+	-7.33	1.68	-10.63	-4.03	-0.18	< .001
Step 2						
(Intercept)	50.77	0.86	49.09	52.45	0.00	< .001
Age Category 25-30	-2.05	0.96	-3.94	-0.16	-0.11	.033
Age Category 31-35	-0.68	1.15	-2.93	1.57	-0.03	.552
Age Category 36-40	-5.59	1.39	-8.31	-2.86	-0.17	< .001
Age Category 41-50	-6.23	1.45	-9.07	-3.38	-0.18	< .001
Age Category 51+	-7.33	1.66	-10.60	-4.07	-0.18	< .001
Gender- Male	2.77	0.69	1.41	4.13	0.14	< .001
Step 3						
(Intercept)	49.60	1.11	47.43	51.78	0.00	< .001
Age Category 25-30	-1.96	0.97	-3.86	-0.06]	-0.10	.043
Age Category 31-35	-0.63	1.15	-2.90	1.63	-0.03	.583
Age Category 36-40	-5.54	1.40	-8.28	-2.80	-0.17	< .001
Age Category 41-50	-6.03	1.46	-8.90	-3.16	-0.17	< .001
Age Category 51 +	-7.35	1.67	-10.63	-4.07	-0.18	< .001
Gender- Male	2.82	0.70	1.46	4.19	0.15	< .001
Attendance 2x a month	1.47	1.46	-1.39	4.33	0.04	.314
Attendance 3x a month	1.36	0.90	-0.41	3.12	0.07	.132
Attendance Not at all	0.87	1.31	-1.70	3.45	0.03	.506
Attendance Weekly	3.68	3.21	-2.61	9.98	0.04	.251
Step 4						
(Intercept)	49.59	1.11	47.41	51.76	0.00	< .001
Age Category 25-30	-1.95	0.97	-3.85	-0.04	-0.10	.045
Age Category 31-35	-0.65	1.15	-2.91	1.61	-0.03	.574
Age Category 36-40	-5.53	1.40	-8.27	-2.79	-0.17	< .001
Age Category 41-50	-6.02	1.46	-8.88	-3.16	-0.17	< .001
Age Category 51 +	-7.21	1.67	-10.49	-3.93	-0.17	< .001
Gender- Male	2.83	0.70	1.47	4.20	0.15	< .001

Attendance 2x a month	1.46	1.46	-1.39	4.32	0.04	.315
Attendance 3x a month	-0.04	1.31	-2.62	2.54	-0.00	.976
Attendance Not at all	0.87	1.31	-1.70	3.45	0.03	.506
Attendance Weekly	3.70	3.20	-2.59	9.99	0.04	.249
Following Mandate	1.69	1.16	-0.59	3.97	0.09	.146

Results within the study did not reach statistical significance for age, gender, frequency of attendance, nor quarter when predicting STS. Scores across Quarter 2 and 3 presented with low scores within the STS scale within the ProQOL, suggesting that CCM workers were not endorsing symptoms related to STS regardless of training frequency. For this study's purpose, the alternative hypothesis; Controlling for age and gender, resilience scores will increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary, was not supported. Scores did not significantly improve following increased attendance three times monthly.

Summary

The quantitative design utilizing hierarchical regression analysis was intended to answer two research questions focused on assessing a workplace resilience training program's effectiveness for commercial content moderators. This was accomplished by gathering archival data from a company that quarterly measures its employees' well-being and resilience. Additional information was collected about the employees' demographic information, frequency of attendance to current training, tenure, and graphic content classifications.

The first research question sought to explore whether offering resilience training could moderate the stress-related procedures of the CCM staff's workflow and allow for greater adaptation when controlling for age and gender. While results presented with significance indicating that age and programming were stronger predictors for resilience improvements, lower

levels of burnout, and increased compassion satisfaction, all were found to have small effect sizes accounting for less than 6% of the variance across.

Although 99% of CCM staff were attending training offerings at least one time weekly, the company moved forward with mandating attendance three times monthly following the onset of COVID-19 to ensure oversight of employee care while teammates were working from home. The researcher enquired whether increased group frequency due to mandated attendance would result in greater resilience and well-being through the acquisition of coping strategies. Therefore, the second research question assessed if the mandate, or rather the increase in attendance, would result in increased resilience and well-being-- increased compassion satisfaction, reduced burnout, and reduced STS. The alternative hypothesis was not supported, and there were no significant differences in scores prior and following the mandate when comparing quarters for resilience. When examining diminished reports of work burnout, compassion fatigue, and secondary traumatic stress due to the nature of the employee's work, results only showed significance for gender and age, however again, only with small effect sizes accounting for less than 5% of the variance. Scores indicate that while the resilience programming is beneficial, stronger predictors for these variables exist and are unaccounted for within this specific study.

Chapter 5

Implications, Limitations, and Recommendations

Commercial content moderators consist of a specialized group of individuals who screen for images, videos, and text flagged as potentially inappropriate or disturbing by set standards of social media platforms, and remove content that violates the terms. Material may be reviewed for up to eight hours a day and can include: petty scams, child sexual abuse material (CSAM), hate speech, depictions of graphic violence, images of adult nudity and sexual activity, terrorist propaganda, and fake accounts (Roberts, 2016; Canegallo, 2019; Rosen, 2018). Although there are an estimated 100,000 commercial content moderators globally (Chen, 2014), little empirical evidence exists studying the potential adverse effects of working within this specific field, nor program evaluations conducted to assess the effectiveness of interventions developed that are intended to safeguards against the onset of stress-related disorders. Literature related to persistent exposure to adverse images and text denotes that individuals are at a heightened risk for developing compassion fatigue and secondary traumatic stress (Baird & Kraken, 2006; Russell & Brickwell, 2014), suggesting a need to examine resilience programs to protect CCM staff.

Therefore, this study aimed to measure the effectiveness of a resiliency training program specifically designed to aid CCM workers in managing the stressors of their unique work. Resilience programs have historically reported success in moderating the adverse effects of stress in the workplace and increase resiliency by instructing adaptational coping skills correlated with resilience outcomes (Rees et al., 2015; Li et al., 2018; Bajaj & Pande, 2016; Joyce, 2018a). The program under review differentiates from traditional programs by providing programming weekly through the workplace lifespan and was instructed by licensed mental health professionals. Furthermore, the program offered onsite clinicians prior to the COVID-19

pandemic, and strictly online the following months after March of 2020, indicating an increased benefit by continuous support from professionals to aid content moderators daily in managing their workflow.

Journalists such as Roberts (2018) and Newton (2020) surmised that the vast majority of workers within content moderation are likely to develop PTSD from exposure. While this may seem probable based upon exposure literature results, these findings were not supported within this study. Following a minimum of six months of employment, CCM staff outcomes within both the treatment and control groups were found to have low levels of STS ($M = 0.57$, $SD = 6.60$), moderate levels of burnout ($M = 33.20$, $SD = 5.58$), and moderate levels of compassion satisfaction related to their work ($M = 41.21$, $SD = 7.17$) when combining scores across all three quarters. Furthermore, high to moderate levels of resilience within the content moderation population were discovered for all three quarters ($M = 33.20$, $SD = 5.58$), indicating this population of content moderators does not meet the criteria for PTSD, as resilience has been found to have an inverse relationship with PTSD according to Connor and Davidson (2003), and there was no evidence supported by scores on STS.

There were a series of eight hierarchical regression analyses conducted to answer the two research questions: 1) Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STSS), and compassion fatigue found between CCM workers offered the resiliency program, than those not offered the program?; 2) Controlling for age and gender, do resilience scores and well-being-- compassion satisfaction, low burnout, and low STS-- scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary? Question one controlled for age and gender, while question two added a control variable of prior attendance to weekly group participation to training.

Furthermore, research question one sought to determine whether access to programming could predict resilience and well-being outcomes by comparing business lines offered resilience programming to those without programming. Questions two and three assessed differences in scores following a mandate to attend weekly groups in the hopes of increasing resilience and well-being when evaluating only employees offered the programming.

Analyses from question one found significant differences between groups offered training compared to those without training, indicating that programming can enhance resilience. Furthermore, gender differences were found with males presenting with increased scores on resilience as opposed to females, portraying the inclination that males are more capable of adapting to this specific workflow. When assessing well-being, significant differences were found between age groups, with those within the 18-24 age range scoring higher on the burnout measurement than their older counterparts. Overall, scores presented with a trend down as age increased. Results align with research related to brain maturation and emotion regulation (Sowell et al., 1999; Johnson et al., 2017; Mauno et al., 2013).

Analyses for questions two and three found no increases in scores of resilience or well-being following the mandate requiring teammates to attend the resilience groups three times monthly. It is important to note that 99% of teammates reported attending training groups at least one time monthly prior to the mandate. Results support prior research where the length of programming was not correlated with increased benefits (Robertson et al., 2015; Jennings et al., 2013). Teammates attending groups one time monthly appear to provide adequate training and support. When evaluating well-being, findings were consistent with question one, where significant differences were found concerning age and gender. As individuals increased in age, scores on compassion satisfaction were significantly higher than the 18-24-year-old age range

and trended upward as age increased. The same results were found for burnout with significantly lower scores within the age ranges greater than 18-24, trending down as teammates aged.

Implications

While statistically significant differences were found for resilience and well-being, results must be interpreted with caution. When assessing differences in treatment versus no treatment groups, training only accounted for 2.4% of resilience variation. Similar findings were calculated when assessing age differences, where age accounted for 4.04% of the variance in burnout scores. Factors to consider that may explain the low variation in scores include the severity of graphic content. Roughly 58.35% of the sample consisted of individuals reviewing low amounts of controversial content (less than 10% of their workflow for the month), and 100% of the lines in the control group accounted for this classification. This would indicate that teammates would likely score lower on indices of compassion fatigue, burnout, and secondary traumatic stress as compared to lines of business reviewing moderate to high controversial content. Therefore, it is difficult to distinguish between the possible negative effects and the potential mitigating effect of the programming without withholding care to teammates assigned the same type of workflow. Furthermore, while the program's training classes were offered weekly for 45 minutes, attendance has historically remained low. For the month of January, average weekly attendance was at 6.9% (n = 54), 4.0% (n = 25) for February, and 15.5% (n = 95) for March out of the possible 616 teammates. Clinicians working within these settings would benefit by providing weekly check-ins with employees reviewing more graphic material to address potential mental health decompensation.

In reference to findings within question two, the variance for age and gender were comparable with only 5.63% of the variation explained for burnout and 2.35% for compassion

satisfaction, with no differences in scores found prior and following the mandate of attendance. While the study results from question two align with prior literature by inferring that shorter program lengths or less frequent attendance are just as effective as the increased frequency, it was difficult to determine whether resilience and well-being scores, albeit all scoring within acceptable ranges for content moderators, resulted from programming or other factors. Recommendations for measuring additional factors that may account for greater variation in scores that predict resilience and well-being outcomes in the workplace than resilience training are presented in the next section.

Furthermore, the company, where results were obtained, deliberately integrated procedures throughout the structure of operations that were intended to foster well-being and increase resilience, such as weekly interpersonal coachings for each teammate. Literature supports coachings' effectiveness, reporting that employees who received ongoing sessions felt more equipped to manage their work tasks, developed solution-focused mindsets, and increased self-efficacy. Interestingly, well-being scores only sustained if coaching sessions were provided ongoing as opposed to single interventions (Carter & Sinclair, 2013). Therefore, the company's initiatives targeted at increasing metrics may have indirectly increased resilience and well-being as they incorporated factors associated with the construct, such as social support, self-efficacy, and mindfulness. Clinicians well versed in resilience and well-being have an opportunity to assist companies in designing coaching strategies targeted at diminishing stress and disorders correlated such as depression and anxiety.

Finally, teammates across all lines of business presented with only mild to moderate burnout (M = 33.20, SD = 5.58); however, scores may be attributed to the current global pandemic and abrupt changes to their work layout and procedures by working from home versus

the office as opposed to working tasks. Mental health researchers have an opportunity to study this unique phenomenon and identify potential mental health risks, work-family conflict, and increased burnout when conducting content moderation within the home where there is an increased potential of inadvertent exposure to family and friends. Passive programming can be designed to provide information and support regarding ways to address these issues.

Limitations

The researcher utilized archival data, allowing for access to longitudinal data and the capability to compare groups of CCM staff with or without interventional care, as it is efficacious and ethical for the researcher to provide care to all moderators. Regrettably, there are drawbacks to convenience sampling that include limits to construct validity as the researcher did not choose the measures. This resulted in the inability to measure the trait of neuroticism identified by Rees et al. (2015) as mediating the effects of resilience on coping.

Further limitations included the necessity to evaluate group differences at the group level versus the individual level in Quarter 2 and Quarter 3 due to the inability to obtain identifiable scores. The researcher had to incorporate additional precautions by requesting data from only employees who worked within their business line for a minimum of six months and exclude any employee terminated within the timeframe. This required the researcher to omit results from a large portion of the sample, resulting in inequivalent groups to ensure participants provided responses at both administration points. It is possible that newer employees and terminated employees may have experienced different levels of resilience than employees included in the study.

Finally, there is a strong likelihood that the environmental factor of COVID 19 and the current historical events of the Black Lives Matter (BLM) movement confounded findings.

Following the global pandemic that sent the nation into quarantine, teammates within the company experienced a unique opportunity to work from home. These may have accounted for the increased scores on compassion satisfaction and decreases in burnout scores found, as opposed to the training. Teammates reported the capability to spend more time with family in the home and reduced costs of childcare or adult care and commuting. Conversely, others reported difficulty in separating work and home life responsibilities, and concerns with balancing obligations, and increased distress regarding health fears. Furthermore, the BLM movement has shed light into unequal disparities between minority groups and the majority, which may have triggered emotional turmoil and discomfort for teammates who have either experienced the occurrence, or others that were unware prior of its existence.

Recommendations

With the limited research within the space of commercial content moderation, multiple future studies can be developed. When replicating the current research, there are several variables to consider as well as avoid. Neuroticism was identified by Rees et al. (2015) as a mitigating factor for resilient skill development, and future replication should include a measurement for this construct. Additionally, as Carter and Sinclair (2013) and Grant et al. (2009) proved that executive coaching has a direct positive relationship with resilience and well-being, the theoretical formulation for the executive coaching process should be explored. Conversely, although demographic data provides more insight and knowledge of factors that influence an individual's capability to adapt or function within this unique work, findings can result in potential hiring bias from companies based on race, gender, or education. Researchers should proceed with caution when releasing findings.

Other studies beneficial to commercial content moderation include identifying the material that is more severe or detrimental to the employee's well-being. The researcher can develop a mixed-method design by first interviewing CCM staff to identify common themes or experiences on protective and risk factors when viewing material. Then for the exploratory part of the plan, bio and neurofeedback can be utilized to track visceral responses to different content in the employee's work setting and categorize severity ratings dependent upon aggregated scores. Questions of interest include whether there are differences in activation of the sympathetic nervous system when reviewing specific types of graphic content or differences in teammates' amygdala activity during the resting periods away from content. By identification of more concerning content, procedures can be modified by the outsourced companies and the entities themselves to limit the number of jobs a CCM worker is assigned that is classified as highly concerning.

Aside from focusing specifically on the types of content, moderators must manage complex tasks that include the integration and application of new material based upon sometimes abrupt changes in procedures or material in high sensory environments. This can lead to higher work burnout rates and contribute to the development of stress-related disorders outside of the material reviewed. Furthermore, prior literature on learning identified that groups that maintain at six allow for enhanced development of problem-solving, interpersonal, presentational, and communication skills, reducing the risk of burnout (Paas and Van Merriënboer, 1994; Choi, Van Merriënboer, & Paas, 2014). For this reason, studies on CCM staff's work environment and team sizes would benefit the field.

As discussed, there are a plethora of studies that can be applied to the population of commercial content moderators. Their work is identified as cognitively and emotionally taxing,

requiring special attention and resources to manage their workload. Workplaces that include heightened risk of stress-related disorders resulting from the work would benefit from consulting with clinical mental health counselors when making decisions regarding employee workflows and developing studies or consulting with universities that draw upon interdisciplinary collaboration to aid in setting standards of care for employees.

References

Abbott, J., Klein, B., Hamilton, C., and Rosenthal, A. (2009). The impact of online resilience training for sales managers on wellbeing and work performance. *Electronic Journal of Applied Psychology: General Articles, 5*(1): 89-95. https://researchbank.swinburne.edu.au/file/2dcbf4cb-f7b7-4103-843c-ec35aa53b642/1/PDF%20%28Published%20version%29.pdf

Aikens, K. A., Astin, J., Pelletier, K. R., Levanovich, K., Baase, C. M., Park, Y., & Bodnar, C. M. (2014). Mindfulness goes to work: Impact of an online workplace intervention. *Journal of Occupational and Environmental Medicine, 56*(7), 721-731. 10.1097/JOM.0000000000000209

Alkema, K., Linton, J. M., Davies, R. (2008). A study of the relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life & Palliative Care, 4*(2), 101-119. https://doi.org/10.1080/15524250802353934

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (DSM-5). *American Psychiatric Publication.*

Arnetz, B. B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2013). Assessment of a prevention program for work-related stress among urban police officers. *International archives of occupational and environmental health, 86*(1), 79-88. 10.1007/s00420-012-0748-6

Baird, K., & Kracen, A. C. (2006). Vicarious traumatization and secondary traumatic stress: A research synthesis. *Counselling Psychology Quarterly, 19*(2), 181–188. https://doi.org/10.1080/09515070600811899

Bajaj, B., & Pande, N. (2016). Mediating role of resilience in the impact of mindfulness on life satisfaction and affect as indices of subjective well-being. *Personality and Individual Differences,* 93, 63-67. https://doi.org/10.1016/j.paid.2015.09.005

Baker, E., Israel, B. A., & Schurman, S. (1996). The integrated model: implications for worksite health promotion and occupational health and safety practice. *Health Education Quarterly,* 23(2), 175-190. https://doi.org/10.1177/109019819602300204

Barrett, P. M. (2020). Who moderates the social media giants? *Center for Business.* https://static1.squarespace.com/static/5b6df958f8370af3217d4178/t/5ed9854bf618c710cb55be98/1591313740497/NYU+Content+Moderation+Report_June+8+2020.pdf

Ben-Zur, H., Gil, S., & Shamshins, Y. (2012). The relationship between exposure to terror through the media, coping strategies and resources, and distress and secondary traumatization. *International Journal of Stress Management, 19*(2), 132-150. https://doi.org/10.1037/a0027864

Berryman, C., Ferguson, C. J., & Negy, C. (2018). Social media use and mental health among young adults. *Psychiatric quarterly, 89*(2), 307-314. https://doi.org/10.1007/s11126-017-9535-6

Biruski, D. C., Ajdukovic, D., & Stanic, A. L. (2014). When the world collapses: Changed worldview and social reconstruction in a traumatized community. *European Journal of Psychotraumatology, 5*(1), 24098. https://doi.org/10.3402/ejpt.v5.24098

Błachnio, A., Przepiórka, A., & Pantic, I. (2015). Internet use, Facebook intrusion, and depression: Results of a cross-sectional study. *European Psychiatry*, 30, 681– 684. http://dx.doi.org/10.1016/j .eurpsy.2015.04.002

Bourke, M. L., & Craun, S. W. (2014). Secondary traumatic stress among internet crimes against children task force personnel: Impact, risk factors, and coping strategies. *Sexual Abuse, 26*(6), 586-609. https://doi.org/10.1177/1079063213509411

Bowles, M. (2019, February 4*). An integrated rapid memory reconsolidation approach: Rapid Resolution Therapy.* The Science of Psychotherapy. https://www.thescienceofpsychotherapy.com/an-integrated-rapid-memory-reconsolidation-approach-rapid-resolution-therapy/

Burton, N. W., Pakenham, K. I., & Brown, W. J. (2010). Feasibility and effectiveness of psychosocial resilience training: A pilot study of the READY program. *Psychology, Health & Medicine 15*(3), 266–277. https://doi.org/10.1080/13548501003758710

Campbell-Sills, L., Forde, D. R., & Stein, M. B. (2009). Demographic and childhood environmental predictors of resilience in a community sample. *Journal of Psychiatric Research, 43*(12), 1007-1012. https://doi.org/10.1016/j.jpsychires.2009.01.013

Canegallo, K. (2019, February 5). *Meet the teams keeping our corner of the internet safer*. The Keyword. https://www.blog.google/around-the-globe/google-europe/meet-teams-keeping-our-corner-internet-safer/

Carolan, S., Harris, P. R., & Cavanagh, K. (2017). Improving employee well-being and effectiveness: systematic review and meta-analysis of web-based psychological interventions delivered in the workplace. *Journal of Medical Internet Research, 19*(7), e271. 10.2196/jmir.7583

Carstensen, L.L., Isaacowitz, D.M., & Charles, S.T. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist,* 54, 165–181. https://doi.org/10.1037/0003-066X.54.3.165

Cieslak, R., Luszczynska, A., Shoji, K. Douglas, A., Melville, E., & Benight, C. C. (2014). A meta-analysis of the relationship between job burnout and secondary traumatic stress among workers with indirect exposure to trauma. *Psychological Sciences, 11*(1), 75-86. https://doi.org/10.1037/a0033798

Chen, A. (2014). The laborers who keep dick pics and beheadings out of your Facebook feed. *Wired*, 23(14). https://www.wired. com/2014/10/content- moderation/

Chmitorz, A., Kunzler, A., Helmreich, I., Tüscher, O., Kalisch, R., Kubiak, T., ... & Lieb, K. (2018). Intervention studies to foster resilience – A systematic review and proposal for a resilience framework in future intervention studies. *Clinical Psychology Review,* 59, 78-100. https://doi.org/10.1016/j.cpr.2017.11.002

Cerezo, M. V., Ortiz-Tallo, M., Cardenal, V., & de la Torre-Luque, A. (2014). Positive psychology group intervention for breast cancer patients: A randomised trial. *Psychological Reports, 115*(1), 44-64. https://doi.org/10.2466/15.20.PR0.115c17z7

Chesak, S. S., Bhagra, A., Schroeder, D. R., Foy, D. A., Cutshall, S. M., & Sood, A. (2015). Enhancing resilience among new nurses: Feasibility and efficacy of a pilot intervention. *Ochsner Journal, 15*(1), 38-44. http://www.ochsnerjournal.org/content/15/1/38?utm_source=TrendMD&utm_medium=cpc&utm_campaign=Ochsner_Journal_TrendMD_1

Clement, J. (2019). *Number of social network users worldwide from 2010 to 2021 (in billions).* Statista. https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users

Colquhoun, D. (2014) An investigation of the false discovery rate and the misinterpretation of p-values. *R Soc Open Sci,* 1, 140216. https://doi.org/10.1098/rsos.140216

Connor, K. M., & Davidson, J. T. R. (2003). Development of a new resilience scale: Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety,* 18, 76-82. https://doi.org/10.1002/da.10113

Dwoskin, E., Whalen, J., & Cabato, R. (2019, July 25). *Content moderators at YouTube, Facebook and Twitter see the worst of the web — and suffer silently.* The Washington Post. https://www.washingtonpost.com/technology/2019/07/25/social-media-companies-are-outsourcing-their-dirty-work-philippines-generation-workers-is-paying-price/

Erogul, M., Singer, G., McIntyre, T., & Stefanov, D. G. (2014). Abridged mindfulness intervention to support wellness in first-year medical students. *Teaching and Learning in Medicine,* 26(4), 350-356. https://doi.org/10.1080/10401334.2014.945025

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2013). G*Power Version 3.1.9.7 [computer software]. Uiversität Kiel, Germany. Retrieved from http://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower.html

Feinstein, A., Audet, B, & Waknine, E. (2014). Witnessing images of extreme violence: a psychological study of journalists in the newsroom. *The Royal Society of Medicine, 5*(8), 1–7. https://doi.org/10.1177/2054270414533323

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist,* 18, 12–23. https://doi.org/10.1027/1016-9040/a000124

Forstmeier, W., Wagenmakers, E.J. & Parker, T.H. (2016) Detecting and avoiding likely false-positive findings – a practical guide. *Biol Rev Camb Philos Soc.* https://doi.org/10.1111/brv.12315

Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2006). A new rating scale for adult resilience: what are the central protective resources behind healthy adjustment? *International journal of methods in psychiatric research, 12*(2), 65-76. https://doi.org/10.1002/mpr.143

Geoffrion, S., Lamothe, J., Morizot, J., & Giguère. C. (2019). Construct validity of the professional quality of life (ProQOL) scale in a sample of child protection workers. *Journal of Traumatic Stress, 32*(4): 566–576. https://doi.org/10.1002/jts.22410

Gow, K., & Celinski, M. J. (2011). Continuity versus creative response to challenge : The primacy of resilience and resourcefulness in life and therapy. *Nova Science Publishers, Inc*.

Grant, A. M., Curtayne, L., & Burton, G. (2009). Executive coaching enhances goal attainment, resilience and workplace well-being: A randomised controlled study. *The Journal of Positive Psychology, 4*(5), 396-407. http://solutions-centre.org/pdf/Grant-et-al-Executive-coaching-enhances-goal-attainment-resilience-and-workplace-well-being-a-randomised-controlled-study-JOPP-20092.pdf

Hicks, B., Carter, A., & Sinclair, A. (2013). Impact of coaching on employee well-being, engagement and job satisfaction. *Brighton (England)*. https://www.employment-studies.co.uk/system/files/resources/files/hrp8.pdf

Houdmont, J., Kerr, R., & Addley, K. (2012). Psychosocial factors and economic recession: The Stormont study. *Occupational Medicine,* 62, 98–104. https://doi.org/10.1093/occmed/kqr216

Idås, T., & Backholm, K. (2017). Risk and resilience among journalists covering potentially traumatic events. *The Assault on Journalism,* 235.

https://www.researchgate.net/profile/Sadia_Jamil5/publication/324835929_The-Assault-on-Journalism/links/5ae6fd0da6fdcc3bea97bb1f/The-Assault-on-Journalism.pdf#page=237

IJntema, R. C., Burger, Y. D. & Schaufeli, W. B. (2019). Reviewing the labyrinth of psychological resilience: Establishing criteria for resilience-building programs. *Consulting Psychology Journal: Practice and Research, 71*(4), 288. https://doi.org/10.1037/cpb0000147

Jacobs, I., Charmillot, M., Martin Soelch, C., & Horsch, A. (2019). Validity, reliability, and factor structure of the secondary traumatic stress scale-french version. *Frontiers in Psychiatry,* 10, 191. https://doi.org/10.3389/fpsyt.2019.00191

Johnson, S. J., Machowski, S., Holdsworth, L., Kern, M., & Zapf, D. (2017). Age, emotion regulation strategies, burnout, and engagement in the service sector: Advantages of older workers. *Revista de Psicología del Trabajo y de las Organizaciones, 33*(3), 205-216. https://doi.org/10.1016/j.rpto.2017.09.001

Joyce, S., Shand, F., Bryant, R. A., Lal, T. J., & Harvey, S. B. (2018a). Mindfulness-based resilience training in the workplace: pilot study of the internet-based resilience@ work (RAW) mindfulness program. *Journal of medical Internet research, 20*(9), e10326. https://www.jmir.org/2018/9/e10326/

Joyce, S., Shand, F., Tighe, J., Laurent, S. J., Bryant, R. A., & Harvey, S. B. (2018b). Road to resilience: a systematic review and meta-analysis of resilience training programmes and interventions. *BMJ open, 8*(6), e017858. http://dx.doi.org/10.1136/bmjopen-2017-017858

Kersting, K. (2004). Brain research advances help elucidate teen behavior. *APA Online Monitor on Psychology, 35*(7).

https://www.apa.org/monitor/julaug04/brain#:~:text=The%20research%20also%20shows%20that,when%20making%20decisions%2C%20he%20said.

Krause, M. (2009). Identifying and managing stress in child pornography and child exploitation investigators. *Journal of Police and Criminal Psychology, 24*(1), 22-29. https://doi.org/10.1007/s11896-008-9033-8

LaMontagne, A. D., Martin, A., Page, K. M., Reavley, N. J., Noblet, A. J., Milner, A. J., Keegel, T., & Smith, P. M. (2014). Workplace mental health: developing an integrated intervention approach. *BMC Psychiatry, 14*(131). https://doi.org/10.1186/1471-244X-14-131

Steiger, M., Bharucha, T., Reidl, M., Venkatagiri, S., Lease, M. (2020). *The psychological well-being of content moderators: The emotional labor of commercial content moderation and opportunities to improve support*. Manuscript submitted for publication.

Leppin, A. L., Bora, P. R., Tilburt, J. C., Gionfriddo, M. R., Zeballos-Palacios, C, Dulohery, M. M., Sood, A., Erwin, P. J., Brito, J. P., Boehmer, K. R. Montori1, V. M. (2014). The efficacy of resiliency training programs: A systematic review and meta-analysis of randomized trials. *PLOS One, 9*(10), 2-16. https://doi.org/10.1371/journal.pone.0111420

Li, M. H., Eschenauer, R., & Persaud, V. (2018). Between avoidance and problem solving: Resilience, self-efficacy, and social support seeking. *Journal of Counseling & Development, 96*(2), 132-143. https://doi.org/10.1002/jcad.12187

Loprinzi, C. E., Prasad, K., Schroeder, D. R., & Sood, A. (2011). Stress management and resilience training (SMART) program to decrease stress and enhance resilience among breast cancer survivors: a pilot randomized clinical trial. *Clinical Breast Cancer, 11*(6), 364-368. https://doi.org/10.1016/j.clbc.2011.06.008

Lu, W., Wang, Z., and Zhang, Y. L. (2014). Resilience as a mediator between extraversion, neuroticism, and happiness, PA and NA. *Pers. Individ. Dif.* 63, 128–133. https://doi.org/10.1016/j.paid.2014.01.015

Maslach, C. (1982). *Burnout: The cost of caring.* Prentice Hall. https://doi.org/10.1176/ps.34.7.650

Mauno, S., Ruokolainen, M., & Kinnunen, U. (2013). Does aging make employees more resilient to job stress? Age as a moderator in the job stressor–well-being relationship in three Finnish occupational samples. *Aging & Mental Health, 17*(4), 411-422. https://doi.org/10.1080/13607863.2012.747077

McGonagle, A. K., Beatty, J. E., & Joffe, R. (2014). Coaching for workers with chronic illness: Evaluating an intervention. *Journal of Occupational Health Psychology, 19*(3), 385. https://doi.org/10.1037/a0036601

Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M. (2014). Feasibility and acceptability of a resilience training program for intensive care unit nurses. *American Journal of Critical Care, 23*(6), e97-e105. https://doi.org/10.4037/ajcc2014747

Min, J. A., Jung, Y. E., Kim, D. J., Yim, H. W., Kim, J. J., Kim, T. S., ... & Chae, J. H. (2013). Characteristics associated with low resilience in patients with depression and/or anxiety disorders. *Quality of Life Research, 22*(2), 231-241. https://doi.org/10.1007/s11136-012-0153-3

Mutluer, T., Şar, V., Kose-Demiray, Ç., Arslan, H., Tamer, S., Inal, S., & Kaçar, A. Ş. (2018). Lateralization of neurobiological response in adolescents with post-traumatic stress disorder related to severe childhood sexual abuse: The tri-modal reaction (T-MR) model

of protection. *Journal of Trauma & Dissociation, 19*(1), 108-125. https://doi.org/10.1080/15299732.2017.1304489

Myers, J. E., & Sweeney, T. J. (2004). The indivisible self: An evidence-based model of wellness. *Journal of Individual Psychology, 60*(3), 234-245. https://libres.uncg.edu/ir/uncg/f/J_Myers_Indivisible_2004.pdf

Newton, C. (2020, May 12). Facebook will pay $52 million in settlement with moderators who developed PTSD on the job. *Verge.* https://www.theverge.com/2020/5/12/21255870/facebook-content-moderator-settlement-scola-ptsd-mental-healthhttps://www.theverge.com/2020/5/12/21255870/facebook-content-moderator-settlement-scola-ptsd-mental-health.

Newton, C. (2019). Bodies in Seats. *The Verge*. https://www.theverge.com/2019/6/19/18681845/facebook-moderator-interviews-video-trauma-ptsd-cognizant-tampa

Palmer, S. (2013). Resilience enhancing imagery: A cognitive behavioural technique which includes resilience undermining thinking and resilience enhancing thinking. *The Coaching Psychologist, 9*(1), 48-50. https://www.researchgate.net/profile/Stephen_Palmer5/publication/326348079_Resilience_Enhancing_Imagery_A_cognitive_behavioural_technique_which_includes_Resilience_Undermining_Thinking_and_Resilience_Enhancing_Thinking/links/5e56ae5aa6fdccbeba05559f/Resilience-Enhancing-Imagery-A-cognitive-behavioural-technique-which-includes-Resilience-Undermining-Thinking-and-Resilience-Enhancing-Thinking.pdf

Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and evaluation in counseling and development, 36*(1), 9-22. http://www.datapsyc.com/petrocelli_2003.pdf

Rees, C. S., Breen, L. J., Cusack, L., & Hegney, D. (2015). Understanding individual resilience in the workplace: the international collaboration of workforce resilience model. *Frontiers in Psychology, 6*, 73. https://doi.org/10.3389/fpsyg.2015.00073

Roberts, S. T. (2016). Commercial content moderation: Digital laborers' dirty work. *Media Studies Publications.* 12. https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1012&context=commpub

Roberts, S. T. (2018, February 8). *Commercial content moderation and worker wellness: Challenges & opportunities.* Tech Dirt. https://www.techdirt.com/articles/20180206/10435939168/commercial-content-moderation-worker-wellness-challenges-opportunities.shtml

Robertson, I. T., Cooper, C. L., Sarkar, M. S., & Curran, T. (2015). Resilience training in the workplace from 2003 to 2014: A systematic review. *Journal of Occupational and Organizational Psychology,* 88, 533–562. https://doi.org/10.1111/joop.12120

Rodríguez Rey, R., Garrido Hernansaiz, H., & Alonso Tapia, J. (2020). Coping and resilience are differently related depending on the population: A comparison between three clinical samples and the general population. *International Journal of Stress Management.* https://doi.org/10.1037/str0000156

Rosen, G. (2018, May 15). *Facebook publishes enforcement numbers for the first time.* Facebook. https://about.fb.com/news/2018/05/enforcement-numbers/

Russell, M., & Brickell, M. (2015). The “double-edge sword” of human empathy: A unifying neurobehavioral theory of compassion stress injury. *Social Sciences,* 4, 1087–1117. https://doi.org/10.3390/socsci4041087

Sartorius, N. (2006). The meaning of health and its promotion. *US National Library of Medicine National Institute of Health. 47*(4), 662-664.

Seibert, A. (2004). Resiliency training: Vitally Needed in today’s workplace. *Behavioral Healthcare Tomorrow,* 15.

Sharar, D. A., Pompe, J. C., & Attridge, M. (2013). Onsite versus offsite EAPs: A comparison of workplace outcomes. *Journal of Employee Assistance, 43*(2). https://archive.hshsl.umaryland.edu/handle/10713/4138

Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture, 8*(4), 482- 490. https://doi.org/10.1037/ppm0000182

Silvers, J. A., Insel, C., Powers, A., Franz, P., Helion, C., Martin, R. E., ... & Ochsner, K. N. (2017). vlPFC–vmPFC–amygdala interactions underlie age-related differences in cognitive regulation of emotion. *Cerebral Cortex, 27*(7), 3502-3514. https://doi.org/10.1093/cercor/bhw073

Sood, A., Sharma, V., Schroeder, D. R., & Gorman, B. (2014). Stress management and resiliency training (SMART) program among department of radiology faculty: a pilot randomized clinical trial. *Explore, 10*(6), 358-363. https://doi.org/10.1016/j.explore.2014.08.002

Sood, A., Prasad, K., Schroeder, D., & Varkey, P. (2011). Stress management and resilience training among department of medicine faculty: a pilot randomized clinical trial. *Journal of General Internal Medicine, 26*(8), 858-861. https://doi.org/10.1007/s11606-011-1640-x

Sowell, E. R., Thompson, P. M., Holmes, C. J., Jernigan, T. L., & Toga, A. W. (1999). In vivo evidence for post-adolescent brain maturation in frontal and striatal regions. *Nature Neuroscience, 2*(10), 859-861. https://doi.org/10.1038/13154

Sprang, G., Clark, J. J., & Whitt-Woosley, A. (2007). Compassion fatigue, compassion satisfaction, and burnout: Factors impacting a professional's quality of life. *Journal of Loss and Trauma*, 12(3), 259-280. https://doi.org/10.1080/15325020701238093

Steinhardt, M. A., Brown, S. A., Dubois, S. K., Harrison Jr, L., Lehrer, H. M., & Jaggars, S. S. (2015). A resilience intervention in African-American adults with type 2 diabetes. *American Journal of Health Behavior, 39*(4), 507-518. https://doi.org/10.5993/AJHB.39.4.7

Steinhardt, M., & Dolbier, C. (2008). Evaluation of a resilience intervention to enhance coping strategies and protective factors and decrease symptomatology. *Journal of American College Health, 56*(4), 445-453. https://doi.org/10.3200/JACH.56.44.445-454

Tempski, P., Martins, M. A., & Paro, H. B. (2012). Teaching and learning resilience: a new agenda in? medical education. *Medical Education-Oxford, 46*(4), 345.

Translations of the CD-RISC. (n.d.). http://www.connordavidson-resiliencescale.com/translations.php https://doi.org/10.1111/j.1365-2923.2011.04207.x

United States Census Bureau (2019, July 1). *Population Estimates*. https://www.census.gov/quickfacts/fact/table/US/PST045219

Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*(8). 1-18.

Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology, 21*(2), 152-169. https://doi.org/10.1186/1477-7525-9-8

Wohn, D. Y. (2019). Volunteer moderators in twitch micro-communities: How they get involved, the roles they play, and the emotional labor they experience. *Association for Computing Machinery*, 160, 1-13. https://doi.org/10.1145/3290605.3300390

Appendix A

ProQOL

PROFESSIONAL QUALITY OF LIFE SCALE (PROQOL)

COMPASSION SATISFACTION AND COMPASSION FATIGUE (PROQOL)

VERSION 5 (2009)

When you [help] people you have direct contact with their lives. As you may have found, your compassion for those you [help] can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a [helper]. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

____ 1. I am happy.

____ 2. I am preoccupied with more than one person I [help].

____ 3. I get satisfaction from being able to [help] people.

____ 4. I feel connected to others.

____ 5. I jump or am startled by unexpected sounds.

____ 6. I feel invigorated after working with those I [help].

____ 7. I find it difficult to separate my personal life from my life as a [helper].

____ 8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I [help].

____ 9. I think that I might have been affected by the traumatic stress of those I [help].

____ 10. I feel trapped by my job as a [helper].

____ 11. Because of my [helping], I have felt "on edge" about various things.

Appendix A (Cont.)

ProQOL

____ 12. I like my work as a [helper].

____ 13. I feel depressed because of the traumatic experiences of the people I [help].

____ 14. I feel as though I am experiencing the trauma of someone I have [helped].

____ 15. I have beliefs that sustain me. 27

____ 16. I am pleased with how I am able to keep up with [helping] techniques and protocols.

____ 17. I am the person I always wanted to be.

____ 18. My work makes me feel satisfied.

____ 19. I feel worn out because of my work as a [helper].

____ 20. I have happy thoughts and feelings about those I [help] and how I could help them.

____ 21. I feel overwhelmed because my case [work] load seems endless.

____ 22. I believe I can make a difference through my work.

____ 23. I avoid certain activities or situations because they remind me of frightening experiences of the people I [help].

____ 24. I am proud of what I can do to [help].

____ 25. As a result of my [helping], I have intrusive, frightening thoughts.

____ 26. I feel "bogged down" by the system.

____ 27. I have thoughts that I am a "success" as a [helper].

____ 28. I can't recall important parts of my work with trauma victims.

____ 29. I am a very caring person.

____ 30. I am happy that I chose to do this work

Appendix B

Company Approval

7/30/2020

[redacted]

Vice President of [redacted]

RE: Permission to Conduct Research Study

Dear [redacted]:

I am writing to request permission to conduct a research study by the collection of data measuring employee resilience and well-being. I am currently enrolled in the Ph.D. Counselor, Education, and Supervision program at St. Mary's University in San Antonio, and am in the process of writing my Dissertation. The study is entitled "Building a Resilient Workplace: Programming for commercial content moderation staff".

I am requesting to obtain the de-identified data of employees who have completed the 10-item Connor Davidson Resilience Scale and the Professional Quality of Life Scale for Quarter 2 and Quarter 3 for comparison who work within content moderation positions. All information pertaining to ____. will be de-identified with only the statement that "data was obtained from a _____ with the United States. Scores on the assessments will be analyzed to answer the following questions:

Controlling for age and gender, are there differences in resilience, burnout, secondary traumatic stress (STSS), and compassion fatigue found between CCM workers offered the resiliency program, than those not offered the program?

Appendix B (Cont.)

Company Approval

Controlling for age and gender, do resilience scores and well-being-- compassion satisfaction, low burnout, and low STS-- scores increase when requiring participation in weekly resiliency skill development courses compared to when participation was voluntary?

Your approval to conduct this study will be greatly appreciated. Furthermore, I would be happy to answer any questions or concerns that you may have at this time. You may contact me at my email address at msteiger@mail.stmarytx.edu or by phone at _____.

If you agree, kindly sign below and return the signed form. Alternatively, kindly submit a signed letter of permission on your company's letterhead acknowledging your consent and permission for me to collect the de-identified data.

Sincerely,

Miriah Steiger, M.A., Doctoral Candidate

Enclosures

cc: Dr. Dan Ratliff, Research Advisor, STMU

Approved by:

[redacted]	[redacted]	30/7/2020
Print your name and title here	Signature	Date

Appendix C

IRB Approval

ST. MARY'S UNIVERSITY

August 28, 2020

Miriah Steiger
Dept. of Counseling
St. Mary's University

DELIVERED BY EMAIL TRANSMISSION

Dear Ms. Steiger:

The IRB has approved the study, Steiger, M. (Ratliff, faculty sponsor). "Building a Resilient Workforce: Programming for commercial content moderation staff." If research participants have any questions about their rights as a research subject or concerns about this research study please contact the Chair, Institutional Review Board, St. Mary's University at 210-436-3736 or email at IRBCommitteeChair@stmarytx.edu.

Dan Ratliff, Ph.D.
IRB Chair
St. Mary's University

The proposal is determined to utilize existing data, which is not publicly available and which will be recorded in such a way that subjects cannot be identified [45 CFR 46.101(b)(4)]. This research is determined to be exempt.

Exempt research does not require IRB review or renewal for five years (2022). If at any time, you make changes to the research protocols that affect human participants, you must file a "Changes to Approved IRB Protocol."

DEPARTMENT OF COUNSELING AND HUMAN SERVICES ■ ONE CAMINO SANTA MARIA ■ SAN ANTONIO, TEXAS 78228-8527
OFFICE: (210) 438-6400 ■ FAX: (210) 438-6441

Appendix C (Cont.)

IRB Approval

ST. MARY'S UNIVERSITY

and/or "Unanticipated Problems" form. Changes must be reviewed and approved by IRB before proceeding with data collection.

Good work on an interesting approach to counselor education. I look forward to seeing your results.

Dan Ratliff, Ph.D.
IRB Chair

CC: Dan Ratliff, PhD, Faculty Sponsor
Melanie Harper, PhD, IRB Area Representative

IRB Policy states, "No individual involved in the conduct and/or supervision of the research project shall participate in its review." This certifies that Dr. Ratliff, the faculty sponsor, did not participate in the IRB review. After the IRB members reached their determination, Dr. Ratliff only assisted with the preparation of the documents.

Melanie Harper

Melanie Harper, Ph.D.
IRB Area Representative, Counseling Dept.

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Curriculum Vitae

Miriah Steiger, Doctoral Candidate

EDUCATION

PhD. Candidate in Counselor, Education & Supervision, CACREP Accredited Program
St. Mary's University, San Antonio, TX
Honors: Chi Sigma Iota, GPA 3.97
Expected Graduation Date: December 2020

M.A. Clinical Mental Health Counseling, CACREP Accredited Program
St. Mary's University, San Antonio, TX
Honors: GPA 4.0, Distinguished Graduate
Graduation Date: August 2016

Former doctoral student **PsyD.** Clinical Psychology, APA Accredited Program
The Chicago School of Professional Psychology
Completed 27 credit hours: including intellectual and personality assessment courses

B.A. Psychology, Minor English Literature
University of Texas at San Antonio, San Antonio, TX
Honors: Graduated magna cum laude, GPA 3.87
Graduation Date: December 2012

PROFESSIONAL LICENSURE & CERTIFICATION

License:
Licensed Professional Counselor (Texas License #76647, Exp. 10/31/2021)

RESEARCH

The Psychological Well-Being of Content Moderators: The Emotional Labor of Commercial Content Moderation and Opportunities to Improve Support

TaskUs

Co- First author

- Wrote a collaborative literature review assessing the current scope of research available related to commercial content moderation, and recommendations for appropriate interventions/care.
- Steiger, M., Bharucha, T., Lease, M., Reidl, M., Venkatagiri, S. (2020). *The Psychological Well-Being of Content Moderators: The Emotional Labor of Commercial Content Moderation and Opportunities to Improve Support*. Manuscript submitted for publication.

Resilient Romanian Immigrant Children in Italy

St. Mary's University

Supervising Researcher: Dr. Ratliff, Spring, 2016

- Analyzed the resiliency factors Romanian immigrant children possess when assimilating into Italian schools.

Attachment style and attachment to pets

The Chicago School of Professional Psychology

Supervising Researcher: Dr. Ronne, Spring 2014

- Analyzed the relationship between attachment styles and type of pets people choose, as well as how well they care for their pets.
- Bradley-Ronne, K., Comeau, N., Steiger, M., Beach, S., Cole, S. & DeGannes, T. (2016), *Puppy Love: The Relationship between Attachment Style and Attachment to Pets.* Presented to the annual meeting of the Midwestern Psychological Association, Chicago, May 7.

Differences in relationship structures between romantic partners and opposite-sex friends

University of Texas at San Antonio

Supervising Researcher: Dr. Fuhrman, Fall 2012

- Developed new scales for measuring the different expectations we have for romantic partners, same-sex friends, and opposite-sex friends.

PROFESSIONAL EXPERIENCE

TaskUs, San Antonio, TX
Director of Global Research & Data for Resiliency
Dates: October 2019- Present

- Conduct human research through quantitative and qualitative analysis, data science and data visualization to help determine the effectiveness of resiliency programming globally.
- Collaborate with data engineering and visualization engineers to access and manipulate data, explain data gathering requirements, and display results.
- Partner with the HR, recruiting and diversity teams on people projects to identify and clarify critical people issues, deeply understand our people processes, and analyze data to drive improvements.
- Bring together TaskUs-specific data and outside research to help leaders understand people issues and results of research projects. Communicate statistical analyses and results, along with implications, to technical and non-technical audiences. Facilitate and enable communication between parties to ensure schedules and goals are met.
- Work with people in the field, customers, prospects, and external constituents to assess market needs.
- Monitor progress and develop strategies to meet goals on time related to wellness initiatives globally.
- Stays updated with changes in licensing and credentialing guidelines to assure program is competitive and meeting appropriate standards.

TaskUs, San Antonio, TX
Therapist Manager
Dates: November 2018- October 2019

- Creation/ implementation of wellness program, and oversight of counselors within the company. Responsibilities include; scheduling, conducting 1 to 1's with clinicians,

developing counselor curriculum for group teachings, structure SOWs for counselor requirements/duties, and consultation with department leads in advocating for employee care.

St. Mary's University, San Antonio, TX

Adjunct University Professor

Dates: August 2018- December 2018

- Conducting instruction and direction for the development of students' advanced skills in the concentration of counseling. Responsibilities include; creation of course formation, syllabus construction, monitoring appropriate theoretical practice of students, and consistent open communication with student's onsite supervisors.

Incarnate Word University, San Antonio, TX

Teaching Assistant

Dates: January 2017- June 2017

- Assisting the professor through co-facilitation of lectures, as well as instructing guest lectures. Additional responsibilities include grading assignments, creating class slides and preparing exams.

St. Mary's University, San Antonio, TX

Research Assistant

Dates: March 2015 – September 2018

- Running data analysis on large scale studies through SPS. Writing professional articles related to data results. Results have included running frequency tables, regression analysis, MANOVA's, and factor analysis on 1,000+ participants with more than 200 variables to analyze.

Roy Maas Youth Alternatives, Meadowland Residential Facility, San Antonio, TX

Clinical Admission & Intake Coordinator

Dates: May 2016- August 2016

- Performed clinical assessments with residents in consultation with the clinical director; perform intake requirements to identify appropriate tailored accommodations and treatment plans for each child; complete preliminary treatment plants, master treatment

plans, and treatment plan reviews for each case worker and judge; assist director in handling residential grievances; and coordinate residential medical evaluations for each child.

COUNSELING & FACILITATION

Mandala Counseling & Consultation, LLC- San Antonio, TX
Dates: November 2019- Present
President

- Provide consultation for companies to assess wellness/well-being needs based upon the size of the company, and nature of the employee's work.

Private Practice of Miriah Steiger, LPC- San Antonio, TX
Dates: June 2018- November 2019
Licensed Professional Counselor

- Conduct individual, couples, and family counseling services to the community.
- *Depression / Anxiety / Adjustment / PTSD / Family Conflict / Improve Couple Dynamics / Goal-Setting*

San Antonio Behavioral Health- San Antonio, TX
Dates: May 2017- September 2018
Crisis Mobile Assessor

- Evaluate individuals for appropriate referral and placement based on the individual's psychological state.
- *Self-Harm / Suicidal ideations / Homicidal ideations / Psychosis / Chemical Dependency / Anxiety / Depression / Anger Management / PTSD*

Laurel Ridge Treatment Facility- San Antonio, TX
Dates: January 2017- March 2018
PRN Therapist

- Provide Individual and Group counseling to adults (Military) and children in the following areas:
- *Chemical Dependency / Anxiety / Depression / Anger Management / PTSD / Self-Harm / Goal-Setting / Crisis Intervention / Safety Planning*

San Antonio College- San Antonio, TX
Dates: May 2016- December 2016

- Provide individual counseling/ group counseling in the following areas:
- *Depression / Anxiety / Adjustment / Sex Addiction / Chemical Dependency / Career Counseling / Binge Eating Cessation / Test Anxiety Alleviation / PTSD*

Roy Maas Youth Alternatives, Meadowland Residential Facility & The Bridge Emergency Shelter, San Antonio, TX
Counseling Intern
Dates: October 2015 – August 2016

- Provided clinical support and surveillance for children between the ages of 5 and 17, presenting with diagnoses of comorbid disorders related to trauma. Position included impromptu therapy sessions and consistent applications of skills such as coordination, scheduling, multi-tasking, presentation development, conflict resolution, organization, leadership, active listening and individualized supervision.
  Provide individual counseling/ group counseling in the following areas:
- *Dependency / Anxiety / Depression / Anger Management / PTSD / Self-Harm / Goal-Setting / Crisis Intervention / Safety Planning*

Family Life Center, San Antonio, TX
Counseling Intern

- Provide individual counseling/ couples counseling/ family counseling in the following areas:
- *Anxiety / Depression / Anger Management / Relationship Issues / Self-Harm / Goal-Setting / Safety Planning*

PROFESSIONAL MEMBERSHIPS

TCA, Chi Sigma Iota, Alpha Chi Honor Society

HONORS RECOGNITIONS AND AWARDS

St. Mary's University Distinguished graduate, 2016; Magna Cum Laude, 2012

TECHNOLOGY COMPETENCIES

SPSS, MaxQDA, Microsoft Word, Microsoft Excel, Outlook, Therapy Notes, TheraNest, Blackboard, Canvas, PowerBI, Smartsheet, Google Docs