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### Stepping Outside: A Quantitative Study Exploring Nature's Effect on Therapist Compassion

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Running head: STEPPING OUTSIDE

Stepping Outside: A Quantitative Study Exploring Nature's Effect on Therapist Compassion

by

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B.A., American University, 2015  
M.S., Antioch University New England, 2018

DISSERTATION

Submitted in partial fulfillment for the degree of  
Doctor of Psychology in the Department of Clinical Psychology  
at Antioch University New England, 2019

Keene, New Hampshire



Department of Clinical Psychology  
**DISSERTATION COMMITTEE PAGE**

The undersigned have examined the dissertation entitled:

**STEPPING OUTSIDE: A QUANTITATIVE STUDY EXPLORING  
NATURE'S EFFECT ON THERAPIST COMPASSION**

presented on June 28, 2019

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## Abstract

This dissertation explored the impact of spending time in nature on therapist levels of compassion fatigue and compassion satisfaction for office- and nature-based therapists. While the study mainly focused on office-based therapists, a sample of nature-based therapists were included for exploratory purposes as they constitute a unique niche of mental health workers who combine traditional talk therapy methods and the healing properties of nature. The literature is reviewed within an ecopsychology frame, key terms are defined, and nature's impact on mental health and wellbeing is explored. One hundred fifty participants (124 office-based, 26 nature-based) were included in this study. They completed the Professional Quality of Life scale, which examined levels of compassion fatigue and compassion satisfaction, as well as a series of demographic questions. They were also asked about the amount of time they spend outside, and how they like to use that time. Utilizing Spearman's correlation, there was a significant negative correlation between time spent in nature and compassion fatigue for office-based therapists. There was no relationship between compassion satisfaction and time in nature for office-based therapists. Similarly, there was no significant relationship between compassion fatigue and compassion satisfaction between the office- and nature-based groups. Post-hoc analyses were conducted to explore additional findings, such as the relationship between geography and time in nature. The results of this study contribute to the literature on the positive impact of spending time in nature on wellbeing, as well as the potential benefit of spending time in nature as a self-care strategy for therapists.

*Keywords:* Compassion Fatigue, Compassion Satisfaction, Nature, Office-Based Therapists

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and Ohio Link ETD Center, <https://etd.ohiolink.com/etd>

### **Literature Review**

In this dissertation, I describe a project that explored the benefits of the natural world for therapist mental health. Utilizing ecopsychology as a framework for understanding the importance of the human-nature relationship, the project explored how therapist interaction with nature might reduce risk of compassion fatigue while increasing compassion satisfaction. The term “therapist” is utilized throughout as an umbrella term for mental health clinicians, who hold either a master or doctoral level degree (i.e., mental health counselors, social workers, counseling psychologists, and clinical psychologists).

While providing care for clients can be rewarding, working in the mental health profession can also be taxing for therapists. They may experience symptoms of burnout, which can include emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment (Maslach, Jackson, & Leiter, 1996). While the research is sparse, there are some findings to suggest that work setting has an influence on burnout rates (Prosser et al., 1996; Vredenburgh, Carlozzi, & Stein, 1999). Therapists may also experience compassion fatigue, which is similar to burnout, and describes the cognitive, behavioral, and emotional impacts of working particularly with trauma clients (Newell & MacNeil, 2010). Conversely, compassion satisfaction describes therapists’ positive experience of their work life. Therapists may experience compassion satisfaction when they feel effective; they believe they are able to implement useful interventions and see their clients improving as a result (Craig & Sprang, 2010).

Most forms of therapy are conducted indoors, in a designated room. By contrast, in nature-based therapy, the natural world is the work setting in which therapists are meeting with their clients. There is ample research demonstrating that going out into the natural world has a

positive impact on the mental, physical, and emotional health of clients (e.g., Bratman, Daily, Levy, & Gross, 2015; Hartig, Evans, Jamner, Davis, & Garling, 2003); however, its impact on clinician wellbeing is currently absent from the literature. Additionally, there is no research examining the impact of spending time in nature on the quality of professional life for office-based therapists. Further, we know little about the comparative quality of professional life between nature- and office-based therapists.

Such an exploration could help determine an important relationship between therapist wellbeing and time in nature. If spending time in nature is related to lower levels of compassion fatigue and higher levels of compassion satisfaction for office-based therapists, it may suggest that getting outdoors can be a protective factor for therapists working indoors all day. Additionally, if nature-based therapists have higher rates of compassion satisfaction and lower rates of compassion fatigue than office-based therapists, it may suggest that doing therapeutic work in nature is a significant factor in protecting against compassion fatigue. While this study primarily aims to explore the former of these two questions, a sample of nature-based therapists were included in this study to explore the latter. To begin to address these gaps in the discourse, in this section I describe the ecopsychology framework supporting this exploration before delving into a review of the current literatures on therapist compassion fatigue and compassion satisfaction, the impact of job setting on rates of burnout, secondary traumatic stress, and the effectiveness of nature for improving mental and physical health.

### **Ecopsychology Framework**

In its broad form, this dissertation discusses the impact of nature on therapist mental health. To underpin my exploration, I utilize the framework of ecopsychology in order to better understand the potential salutary relationship between nature and therapists. Ecopsychology can

be defined as “a worldview and diverse social movement that recognizes a synergy between human mental health and wellbeing and the health and ecological integrity of the natural environment” (Doherty, 2011, p. 1). More simply, it is the study of the relationship between humans and nature. The term “ecopsychology” was first coined by Theodore Roszak in his 1992 book, *The Voice of the Earth*. An earlier work, *Nature and Madness*, by Paul Shepard (1982) also discussed the relationship between humans and nature. Shepard asserts that by turning away from hunting and gathering and moving towards agriculture and, eventually, industrialization, humans have lost touch with our intimate relationship with nature. In this separation, humans have lost the sense of being a part of nature, and instead utilize technology to overpower the environment. Shepard argues that this growing separation leads to mental illness.

In a related analysis, Martin (2009) uses an attachment perspective to conceptualize humans’ separation from nature. He argues that humans have developed an insecure, ambivalent attachment to nature. He asserts that just as an infant is dependent upon its mother, humans are dependent upon nature. With this dependence, humans must negotiate both the nourishing and destructive aspects of nature. Utilizing Klienian terms, Martin argues that humans are in a paranoid schizoid position to nature. Thus, we are unable to internalize the nurturing and powerful components of nature. He explains that humans have taken a defensive stance of omnipotence in order to gain power over nature. Martin states: “these defenses can be seen in our attempts to dominate nature, in the sense of vulnerability we feel at times in the face of its indifference to us and our dependencies on it” (p. 29). Like Shepard (1982), Martin believes that this grim relationship with nature detrimentally impacts mental health; by contrast, developing a healthier attachment to nature promotes mental wellbeing.

Ecopsychology's discussion on human attachment to nature highlights the deep connection and history of human beings and nature. In a world with endless technology, it can be easy to forget the primitive and essential connection humans have had with nature throughout the many centuries in which humans lived off the land and survived among the natural elements. Shepard (1982), Roszak (1992), Martin (2009), and other ecopsychologists argue that returning to this relationship with nature can have healing impacts on mental health and the environment—including, perhaps, therapists who are particularly vulnerable to compassion fatigue. Ecopsychologists do not call for a return to hunting and gathering, but rather a rebuilding of a respectful relationship with our natural world. To illustrate this, ecopsychologists often point to aboriginal groups who maintain a mutually enhancing relationship with nature (Martin, 2009). Perhaps, as stewards of mental health, therapists can reconnect with nature to promote their own wellbeing and potentially prevent the occupational hazards of compassion fatigue, burnout, and secondary traumatic stress.

### **Therapist Compassion Fatigue and Compassion Satisfaction**

Often, individuals utilize terms such as compassion fatigue, burnout, secondary traumatic stress, and vicarious trauma interchangeably, and the literature is unclear in its delineation among these terms. Since 1995, when the impacts of being a caregiver to traumatized individuals began to be discussed, “over 500 reviewed papers, books, and articles have been written” about the effects of exposure to trauma narratives (Stamm, 2010, p. 9). Still, definitions and distinctions of meaning continue to be vague and diffuse.

In particular, compassion fatigue is often used interchangeably with similar terms, such as secondary traumatic stress and vicarious traumatization (Craig & Sprang, 2010). Craig and Sprang provide some clarity in their description of vicarious trauma as impacting cognitions,

while secondary traumatic stress impacts behaviors and emotions. Notably, the behavioral and emotional symptoms of secondary traumatic stress mirror symptoms of post-traumatic stress disorder (PTSD)—the therapist becomes similarly symptomatic through empathically absorbing the experience of a patient’s trauma, experiencing it as if it were their own (Newell & MacNeil, 2010). Craig and Sprang (2010) suggest more broadly that compassion fatigue encompasses the cognitive, behavioral, and emotional components of both vicarious trauma and secondary traumatic stress.

In addition to the negative impacts of working with traumatized individuals, therapists may also experience burnout, which is a more general description of the impact of job stress across professions (Newell & MacNeil, 2010). The Professional Quality of Life Scale (ProQOL), selected for this dissertation project, is a widely utilized questionnaire that measures levels of all of these constructs: compassion fatigue, secondary traumatic stress, burnout, and also compassion satisfaction (Stamm, 2010).

In an effort to better organize the various terms, Stamm (2010) separates professional quality of life into two main constructs: compassion fatigue, and compassion satisfaction, which describe the negative and positive effects of being a caregiver, respectively. Compassion fatigue is broken down further into two subscales, burnout and secondary traumatic stress. In this structure, burnout describes the general negative effects of caring for others, while secondary traumatic stress describes the negative impacts of helping individuals who have experienced trauma (Stamm, 2010). Other researchers have also defined compassion fatigue in this way, including Newell and MacNeil (2010), who define compassion fatigue as “a syndrome consisting of a combination of the symptoms of secondary traumatic stress and professional burnout” (p. 61). As I used the ProQOL for this project, I adhered to Stamm’s (2010) organization and

definition of constructs. Within this organization, aspects of each component of compassion fatigue (i.e., burnout, secondary traumatic stress, and vicarious trauma) are included. While vicarious trauma is not separated into its own variable, questions regarding the state of therapist cognition are included in the questionnaire.

**Compassion fatigue.** Stamm (2010) defines compassion fatigue as the negative impact of caring for others. Therapists who regularly listen to the stories of their traumatized clients may be at a particularly heightened level of risk for developing compassion fatigue (Figley, 2002). Stamm (2010) breaks down compassion fatigue into two components, burnout and secondary traumatic stress.

**Burnout.** According to a review of several studies, 21-67% of mental health workers experience high degrees of burnout during their career (Morse et al., 2012). These rates suggest there is a component of working in the mental health field that makes therapists variably susceptible to symptoms of burnout. In fact, Newell and MacNeil (2010) explain, “The single largest risk factor for developing professional burnout is human service work in general” (p. 59).

Burnout typically includes three main components: emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment (Maslach et al., 1996). Emotional exhaustion can be defined as feeling “emotionally over-extended” after sitting with clients (Maslach et al., 1996, p. 15). Depersonalization is the sense that therapists get when they become disconnected or uninterested in their work with clients (Maslach et al., 1996). Therapists experiencing symptoms of depersonalization may adopt a negative attitude toward their clients (Morse et al., 2012). Personal accomplishment is the feeling that therapists have when they see themselves as “competent and successful” in their work (Maslach et al., 1996, p. 15); these positive self-attributions decrease steadily for therapists who are burning out. Moreover, burnout



can further lead to a decrease in wellbeing and increase in feelings of anxiety and depression (Newell & MacNeil, 2010). It has also been associated with symptoms such as difficulty sleeping, physical pain, and memory problems (Morse et al., 2011). Burnout may be a state that therapists are likely to encounter over the course of practice. For example, one study found that as many as 60% of psychologists "felt significantly depressed at some point during their careers" (Barnett, Baker, Elman, & Schoener, 2007, p. 605). Over many comparable explorations, there is a clear association between the hard work of psychotherapy and susceptibility to symptoms of burnout.

*Secondary traumatic stress.* While burnout describes the general negative experience of being overworked and underappreciated, secondary traumatic stress results specifically from working with individuals who have experienced trauma. Figley (1995) defines secondary traumatic stress as "the stress resulting from helping or wanting to help a traumatized or suffering person" (p. 21). In comparison to burnout, secondary PTSD symptoms are a significant feature of secondary traumatic stress (Craig & Sprang, 2010). The basic job requirements of a therapist to build a therapeutic alliance and utilize listening skills to gain an empathetic understanding of a client's story may put them at risk for secondary traumatic stress (Newell & MacNeil, 2010). Craig and Sprang suggest that empathy for another's suffering is the mechanism by which the therapist becomes traumatized by the experiences shared by their clients (Craig & Sprang, 2010). Thus, one of the most fundamental characteristics of being a therapist makes them vulnerable for developing secondary traumatic stress.

The stress incurred by listening to traumatic narratives may lead to symptoms including general fatigue, headaches, difficulty sleeping, depressive symptoms, or gastrointestinal issues (Sinclair, Raffin-Bouchal, Venturato, Mijovic-Kondejewski, & Smith-MacDonald, 2017). As

indicative of possible secondary traumatic stress, therapists may also experience other symptoms commonly seen in their clients contending with PTSD. These symptoms include, for example: “intrusive thoughts, traumatic memories or nightmares associated with client trauma, insomnia, chronic irritability or angry outbursts,” which have a deleterious impact on their mental and physical wellbeing (Newell & MacNeil, 2010, p. 60).

Sinclair and colleagues (2017) further describe compassion fatigue, and likely the traumatic experience of secondary traumatic stress, as having a “global impact on a healthcare provider’s identity, self-understanding and existential well-being” (p. 14). Additionally, while the more global experience of compassion fatigue builds up over time, secondary traumatic stress has a more sudden onset (Newell & MacNeil, 2010).

Several risk factors for developing secondary traumatic stress have been identified within the literature. These include young age, female gender, number of trauma clients, and the therapist’s level of experience working with trauma (Craig & Sprang, 2010). Additional risk factors are therapist anxiety and mood disorders or a trauma history of their own (Newell & MacNeil, 2010; Pearlman & Mac Ian, 1995). However, it should be noted that the literature is mixed. In a meta-analytic style review of multiple studies including 1,289 participants, the ProQOL Manual cites no significant difference among compassion satisfaction, burnout, and secondary traumatic stress across gender, age, income, years with employer, and years in the field (Stamm, 2010). However, the manual identifies that white participants reported less burnout and secondary traumatic stress as compared to non-white respondents.

Since secondary traumatic stress is a result of working with traumatized populations, therapists working with many trauma clients are at higher risk. For example, a study examining trauma workers following the Oklahoma City bombing found that 65% of the therapists showed

signs of PTSD (as cited in Figley, 2002). Conversely, protective factors for secondary traumatic stress have been identified as supervision, training, “perceived coping ability,” level of experience, self-care strategies, and social support (Craig & Sprang, 2010, p. 321).

*Addressing symptoms of compassion fatigue through self-care.* Due to the prevalence of compassion fatigue, the American Psychological Association (APA) has recognized that the challenges and demands of listening to and providing support for individuals in distress can be quite stressful for psychologists (Newell & MacNeil, 2010). As one may expect, compassion fatigue can have an impact on the quality of mental healthcare service providers can give. Their ability to provide full attention and empathize with the client may be impacted adversely when they are experiencing any of the symptoms associated with compassion fatigue (Craig & Sprang, 2010; Morse et al., 2012).

Psychologists acknowledge that if they are unable to care for themselves, they will not be able to provide adequate care for their clients (Board of Professional Affairs’ Advisory Committee on Colleague Assistance [BPA ACCA], 2016). Thus, self-care is emphasized to help prevent symptoms of burnout. Self-care can be defined as “the utilization of skills and strategies by workers to maintain their own personal, familial, emotional, and spiritual needs while attending to the needs and demands of their clients” (Newell & MacNeil, 2010, p. 62).

Psychologists are encouraged to make time for themselves and reach out to others for support when needed (BPA ACCA, 2016). Self-care may also include attending to basic physiological needs, such as diet, exercise, and sleep (Newell & MacNeil, 2010). In addition, it may also involve activities, such as outdoor recreation (Hesse, 2002). Hesse explains that spending time in nature, such as “taking trips to the park, hiking, boating, camping, or even simply caring for pets or plants,” can promote mental health (p. 303). Spending time in nature may serve as a protective

or healing factor for compassion fatigue.

**Compassion satisfaction.** The work of therapy clearly does not lead inevitably to compassion fatigue. The converse experience, —compassion satisfaction—is an important and desirable alternative, arising when therapists feel effective and gratified by their engagement (Craig & Sprang, 2010; Stamm, 2010). In their exploration of buffering conditions, Craig and Sprang found that experienced professionals were more likely to experience compassion satisfaction, whereas younger clinicians were likely to experience symptoms of burnout. Thus, one conclusion is that younger professionals may need to make more efforts to attend to their mental health. Craig and Sprang’s study also found that the use of evidence-based practices was associated with compassion satisfaction. Perhaps this is a reflection of the therapist’s belief in the evidence of the therapeutic approach, or it may be that the therapists utilizing evidence-based practices are providing more effective care. Additionally, level of training and preparation may also be a factor contributing to compassion satisfaction. For example, Sprang, Clark, and Whitt-Woosley (2007) found that therapists trained specifically to work with trauma populations experience more compassion satisfaction than therapists without that training. The authors concluded that feelings of competence in treating trauma-related disorders may serve as a buffer from susceptibility to burnout and compassion fatigue.

A third study linked higher levels of compassion satisfaction to the perceived supportiveness of management, supervision, and engagement in non-therapeutic work activities, such as research or program development (Sodeke-Gregson, Holtum, & Billings, 2013). It seems positive working relationships and the opportunity to play multiple roles in an organization and thus, take a break from listening to trauma narratives, may help promote compassion satisfaction.

There may also be an important connection between self-care and compassion satisfaction. For example, one study exploring self-care and compassion satisfaction in hospice workers found that increased self-care and increased compassion satisfaction were associated with decreased compassion fatigue and burnout (Alkema, Linton, & Davies, 2008). While the literature is sparse in this area, it is reasonable to suggest that therapist self-care and compassion satisfaction could be safeguards against compassion fatigue.

**Care setting impact on secondary traumatic stress and burnout.** Another element that may contribute to rates of secondary traumatic stress and burnout is the setting in which therapists are doing their work. As discussed above, working with traumatized clients puts therapists at risk for secondary traumatic stress. Thus, settings in which therapists are working with high numbers of traumatized individuals are likely to experience high levels of secondary traumatic stress (Bober & Regehr, 2006).

There has been some research conducted on the impact of job setting on burnout rates in psychologists. One study surveyed 521 counseling psychologists using the Maslach Burnout Inventory and found there were higher rates of burnout in hospital settings as compared to private practice (Vredenburgh et al., 1999). Another study conducted around the same time in London, using the same measure, discovered community mental health staff had higher burnout scores than those who worked in a hospital setting or other outpatient settings (Prosser et al., 1996). In yet another comparison, Sprang and colleagues (2007) found that therapists working in rural settings experienced more symptoms of burnout as compared to those in urban settings. While there is not an abundance of research on this topic, and findings do not paint a clear picture of optimal circumstances, it seems that burnout rates do vary across workplace environments.

Exploring workplace characteristics further, most therapy is provided indoors in a small office, often with minimal—if any—access to natural light. While the majority of therapeutic modalities require the therapist and client sit for 50 minutes at a time, some allow for movement, including, for example, play therapy, some forms of family therapy, and newer mind-body approaches that allow and encourage changes in stance and position within the therapy room.

*Impact on mental health of sitting indoors for extended periods of time.* These more active interludes constitute a very small proportion of therapeutic work even for therapists specializing in them. According to a survey completed by the APA, on average, psychologists spend nearly 25 hours a week providing therapy and supervision (Michalski, Mulvey, & Kohout, 2010). This suggests that typical therapists, working a 40-hour week, are spending more than half of their time sitting indoors. The remaining time is likely also spent indoors but may or may not involve some greater movement. Non-therapeutic activities may include, for example, other sedentary experiences like practice management, education, and administrative duties. These data suggest psychologists are spending the majority of their time at work indoors with relatively little movement beyond walking to the waiting room, going to lunch, or occasionally venturing elsewhere around the office building (Michalski et al., 2010).

Compounding the susceptibility to burnout inherent to the work of therapy, spending a significant amount of time in sedentary positions can also be detrimental to mental health. For example, a study conducted in the United Kingdom found that adults who spent more than eight hours per day seated were more likely to experience symptoms of depression or anxiety than adults who spent less than eight hours per day seated (Gibson, Muggeridge, Hughes, Kelly, & Kirk, 2017). A similar study conducted in South Korea confirmed this pattern, noting that men are more likely than women to develop major depressive disorder if they spend more than eight

hours a day seated (Nam et al., 2017). While the correlation between extensive sitting and depression seems noteworthy in itself, it is also possible that the combination of extensive sitting and attending closely to the suffering of others makes therapists even more vulnerable to burnout or compassion fatigue.

**Nature as a job setting.** Apart from the mental health hazards associated with a sedentary occupation, therapists bound to chair and room to make a living are also not usually able to spend many hours outdoors—even if this is an activity that gives them pleasure. Therapists are not alone in the disproportionate amount of time spent indoors. For example, the Environmental Protection Agency sponsored a study including 9,196 Americans, and found that on average, participants spent approximately 92% of their time indoors or in a car (Klepeis et al., 2001). Moreover, French researchers found that in their study of 35,444 working adults, those who worked in sedentary jobs were more likely to engage in sedentary behavior outside of work, such as watching television or reading (Saidj et al., 2015).

As a result of the amount of time spent indoors, some therapists might even long for the opportunity to experience the rejuvenating and compassion fatigue-reducing effects of nature. A growing minority of therapists are becoming nature-based counselors; they are solving this problem by taking therapy outside. These therapists vary in their specific strategies but share a dedication to working within the combined healing components of both therapy and nature, intentionally taking advantage of the beneficial elements of the natural world.

### **Theories and Research Supporting Nature’s Restorative Effects**

**Theory.** The use of nature as a restorative space is not a novel concept. There are multiple theories that suggest nature itself has healing elements. One of the most cited theories was developed by E. O. Wilson when he coined the “biophilia hypothesis” in 1984. Biophilia is

the idea that humans are naturally connected to nature and other living organisms. Thus, humans instinctually seek out natural spaces and feel at ease in them (Wilson, 1984). Wilson suggests that humans' affinity for nature has a genetic component, and thus, humans' attraction to nature occurs outside consciousness.

Several years after Wilson began discussing biophilia, Roger Ulrich and colleagues (1991) developed the stress recovery theory. They proposed that humans experience physiological and affective change, such as decreased arousal and increased positive emotions, when we receive stimuli from a natural environment. Later studies explored how these stimuli can be the physical environment as well as pictures, sounds, and smells evocative of it (Alvarsson, Wiens, & Nilsson, 2010; Berto, 2014; Lee, Wu, Tsang, Leung, & Cheung, 2011).

Ulrich (1983) argues that humans are evolutionarily prepared to be in natural environments because that is where the species has spent most of its history. A complementary theory, the attention restoration theory, adds that there are an overwhelming number of stimuli in urban environments for humans to attend to, which lead to mental fatigue (Hartig et al., 2003). In other words, the excess stimuli tax the body. For example, being exposed to constant background noise, such as living near an airport, has been correlated with increased secretion of stress hormones and high blood pressure in children (Evans, Bullinger, & Hygge, 1998).

**Physiological impacts of nature.** Researchers have also utilized physiological measures to explore the positive impacts of spending time in nature. One study found that walking in a nature reserve led to decreased blood pressure as compared to walking in an urban environment (Hartig et al., 2003). This finding was supported in a Japanese study that found being in nature is associated with lower cortisol and blood pressure levels (Park, Tsunetsugu, Kasetani, Kagawa, & Miyazaki, 2009). Another related study found that being in nature increases natural killer



immune cells, which are responsible for protecting against tumors and viruses (Li et al., 2009).

**Cognitive and affective impacts of nature.** Being in nature is also associated with improved cognitive functioning and reduced mental fatigue. Studies have found that when individuals spend time away from areas with constant background noise and, instead, expose themselves to natural stimuli, they experience more positive emotions and less mental fatigue. For example, in one study, 60 participants were randomly assigned to a 50-minute walk in a natural or urban setting (Bratman et al., 2015). The natural setting was characterized by grassland with various plants and the urban environment included buildings and busy traffic. Affective and cognitive measures were given pre- and post-intervention. The study found the people who walked in the natural grassland had decreased levels of anxiety, rumination, and negative affect, and increased working memory performance as compared to those who walked in the urban setting (Bratman et al., 2015).

A similar study asked 12 participants to wear portable EEGs and go for a 25-minute walk that encompassed a moderately urban shopping center, a park, and a busy street. Researchers found when the participants were in the green space, they had reduced levels of frustration, engagement, and arousal, and increased meditation. In findings similar to those of Bratman and his colleagues (2015), the researchers in this study concluded that the brain was less fatigued when subjects were walking through the natural space (Aspinall, Mavros, Coyne, & Roe, 2015).

These studies suggest that simply being in nature has a beneficial effect on individuals who may experience positive physiological and emotional change just walking through it. Perhaps therapists and their clients might experience some of these regulating effects simply by having their therapy sessions outdoors. Further, research demonstrates that the more time individuals spend in nature, the more likely they are to experience its positive effects (Atchley,

Strayer, & Atchley, 2012; Capaldi, Dopko, & Zelenski, 2014). These data imply that therapists who spend their work and leisure time too much indoors may well be missing out on an evidence-based buffer against compassion fatigue.

The theories and research discussed in this section demonstrate nature's positive effects on physiological, affective, and cognitive health. By returning to nature which is less taxing on our senses than the rest of modern life, humans experience a restorative effect (Kaplan & Kaplan, 1989). While there appears to be a dosage effect—the more time outdoors, the better—even small excursions into the natural world appear to have salutary effects on both mind and body.

### **Nature-based Therapy**

Together, biophilia, stress recovery theory, and attention restoration theory provide the conceptual underpinnings of nature-based therapy. The phrase *nature-based therapy* will be utilized as an umbrella term to describe any therapy that includes the use of nature. There are many forms of therapy that fall in this category, including, for example, adventure therapy, wilderness therapy, horticultural therapy, and equine therapy. However, members of the nature-based therapy community have not achieved a general consensus of terminology to describe their work (McGreeney, 2016). At times, nature-based therapy is also referred to as *ecotherapy*, which seeks to create “a deeper connection to nature” (McGreeney, 2016, p. 24). The Outdoor Behavioral Health Center, which conducts research on impact of conducting therapy in nature, calls this work “outdoor behavioral health” (Outdoor Behavioral Health Center, 2018). However, for the purposes of this dissertation, I will refer more simply to all of these treatment modalities as nature-based therapy.

Discussed further in following subsection, nature-based therapy is used to treat many

different mental health disorders including many that appear in the APA's Diagnostic and Statistical Manual of Mental Disorder, fifth edition (DSM-5). While it is not recognized by the DSM V and is not considered to be a medical diagnosis, many nature-based therapies also treat *nature-deficit disorder*. This term was first coined by Richard Louv in his 2005 book, *Last child in the woods: Saving our children from nature-deficit disorder*. Louv (2005) asserts that nature-deficit disorder describes the impact of human's growing separation from nature, and includes "diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses" (p. 36). This concept highlights both the theoretical underpinnings of nature-based therapy by emphasizing the importance of a strong relationship between humans and nature as well as the negative cognitive and emotional consequences when that relationship diminishes.

**Effectiveness of nature-based therapy.** While little is known about its effects on involved professionals, nature-based therapy has well-documented benefits for clients. A review of the current research supporting nature-based therapy can provide a glimpse into the ways nature impacts mental wellbeing for therapists, too. It is likely that the client and therapist are exposed to the same positive aspects of being in nature, despite one providing therapy and the other receiving it.

Historically, nature-based therapies have been utilized mostly with youth and adolescents (Gass, Gillis, & Russell, 2012). However, they have also been used with adults experiencing stress-related mental health disorders (Sahlin, Matuszczyk, Ahlborg, & Grahn, 2012), anxiety disorders (Osborne, 2018), trauma survivors (Norton, Tucker, Farnham-Stratton, Borroel, & Pelletier, 2019; Straus, 2018), veterans (Bird, 2015), and older adults (Kelly, 2016). It should be noted that nature-based therapy is a relatively recent innovation. While there are many case

studies and qualitative explorations examining the effects of nature-based therapies, thus far, the ecopsychology field still lacks rigorous experimental data, such as from randomized-controlled trials.

However, there are studies that suggest nature-based therapy is a promising practice. For example, there has been one meta-analysis conducted on 36 studies and encompassing 2,399 participants, who utilized private pay services (Bettmann, Gillis, Speelman, Parry, & Case, 2016). The study explored change across six domains: self-esteem, locus of control, behavioral observations, personal effectiveness, clinical measures, and interpersonal measures. Researchers discovered moderately positive effect sizes in all six areas of study. However, they acknowledged that few of the projects included a control group, and the majority of them were dissertations without a peer review process. While there were some interesting findings and encouraging outcomes, this meta-analysis further reflects the need for more rigorous study of the effectiveness of nature-based therapy (Bettmann et al., 2016).

Explorations on specific populations similarly demonstrate positive effects. For example, one study examined the effects of an outdoor behavioral health program for adolescents who displayed emotional and behavioral problems. Data collected from 523 adolescent self-reports and 372 parent reports suggested there was a significant decrease in symptoms by the end of the program. Follow-up with randomly selected families suggested the results were retained a year later (Russell, 2003). There is growing evidence to support the use of nature-based therapies for trauma survivors as well. For example, a South African study examining adventure therapy for adolescent girls who experienced trauma found that the participants had a greater emotional vocabulary and increased self-awareness following adventure therapy (van Rensburg & Reyneke, 2019). Another study explored the use of adventure therapy with families who have

been impacted by abuse or neglect, and found increased communication and problem solving after treatment (Norton et al., 2019).

Longitudinal research, using qualitative and quantitative methods, has also been conducted with military veterans who took part in an outdoor therapy program. Researchers used a variety of self-report questionnaires as well as journal entries, and discovered the veterans felt they had greater self-determination and competence as well as a sense of belonging and cohesion with their group members by the end of the program (Bird, 2015). This study, along with the few others that have been published, suggest nature-based therapies may be effective in working with many different populations to increase wellbeing and decrease symptomology for both adolescents and adults (Russell, 2003).

**Nature and physical activity.** While some nature-based therapies involve simply spending time in nature, others include a physical activity element, such as walking around a park, hiking, or gardening. Physical activity, even apart from the natural world, has been shown to have beneficial effects on mental as well as physical health. For example, one randomized control trial found that exercise was as effective as an antidepressant for sedentary adults with major depressive disorder (Weir, 2011). Another related study found that exercising regularly significantly reduced depression symptoms in low, moderate, and high intensity treatment groups (Helgadottir, Hallgren, Ekblom, & Forsell, 2016). A third study connected regular physical activity including gardening to a lower risk for dementia (Raji, et al, 2016). The American Heart Association (2018) recommends that individuals should engage in moderate exercise for 30 minutes, five days a week or high intensity exercise for 75 minutes per week; Smits and Otto (2009) suggest that following these exercise recommendations helps to combat mood and anxiety disorders. It is possible that the mood enhancing effects of both being outdoors and engaging in

physical activity can additionally buffer therapists from feelings of compassion fatigue.

### **Knowledge Gap and Research Questions**

This section has explored the literature on compassion fatigue and compassion satisfaction. Utilizing ecopsychology as a framework to understand the importance of the human-nature connection, spending time in nature was introduced as a potential protective factor against compassion fatigue, as well as a facilitating factor for compassion satisfaction.

There have not been any published explorations of the impact of spending time in nature on therapist compassion fatigue or satisfaction. This study included quantitative methods to explore rates of self-reported burnout and secondary traumatic stress, two variables that comprise compassion fatigue, and compassion satisfaction for therapists working in traditional office settings including, for example, community mental health centers, hospitals, private practice, schools, or other indoor locations. Additionally, this study collected data on rates of burnout, secondary traumatic stress, and compassion satisfaction from nature-based therapists. While the initial hope was to gather data from two equally robust samples of office- and nature-based therapists, barriers to recruitment of nature-based therapists made this unfeasible. Thus, the study focused primarily on the effects of spending time in nature on office-based therapists' levels of compassion fatigue and compassion satisfaction. The nature-based therapist sample was utilized for exploratory purposes to consider whether nature-based therapists differ from office-based therapists; the findings were used to inform future directions for research.

Office-based and nature-based therapists have been separated in this study because it is likely that the reasons why a therapist chooses to engage in nature-based therapy as opposed to an office-based approach may impact their experience of burnout, secondary traumatic stress, or compassion satisfaction. For example, perhaps aspiring therapists who are more flexible or

unconventional are more likely to choose a nature-based path. Thus, to avoid a possible third, unknown variable from impacting the results, the data collected from the nature-based therapists created a second sample. The inclusion of nature-based therapists provided the opportunity to explore a niche group of mental health workers who spend a significant amount of time in nature.

**Hypotheses:** Based on the review of the literature, I hypothesized that the amount of time spent in nature will have an inverse relationship to burnout and secondary traumatic stress, and a direct relationship with compassion satisfaction in both office- and nature-based therapists.

- (1) Burnout: Office-based therapists who spend more time outside will have lower levels of burnout than office-based therapists who spend less time outside.

Rationale: Nature's impact on cognitive functioning, such as working memory and mental fatigue likely protect therapists spending ample time in nature from feeling overwhelmed by their workload (Bratman et al., 2015).

- (2) Secondary traumatic stress: Office-based therapists who spend more time outside will have lower levels of secondary traumatic stress than office-based therapists who spend less time outside.

Rationale: Nature's positive impact on physiological wellbeing, such as decreased heart rate and cortisol levels, might help reduce symptoms of PTSD that accompany secondary traumatic stress (Park et al., 2009).

- (3) Compassion satisfaction: Office-based therapists who spend more time outside will have higher levels of compassion satisfaction than office-based therapists who spend less time outside.

Rationale: Nature's impact on affect, such as increased positive mood, likely leads therapists who spend ample time in nature to have more positive associations to working with their clients (Bratman et. al., 2015).

- (4) Nature-based therapists: Nature-based therapists will have higher levels of compassion satisfaction and lower levels of compassion fatigue than office-based therapists.

Rationale: Due to their increased exposure to nature, nature-based therapists likely experience more of nature's benefits on cognitive, emotional, and physical health than their office-based counterparts.

## **Method**

### **Quantitative Design**

A quasi-experimental design was used to explore the relationship between time spent in nature and rates of compassion fatigue and compassion satisfaction for office-based therapists, as well as to examine the magnitude and significance of differences in burnout, secondary traumatic stress, and compassion satisfaction between office-and nature-based therapists. The independent variable was time in nature, which was utilized as a continuous variable. The dependent variables were burnout, secondary traumatic stress, and compassion satisfaction. These were also used as continuous variables. The Professional Quality of Life Scale (ProQOL) was utilized to measure each of the dependent variables (Stamm, 2005). The ProQOL combines the burnout and secondary traumatic stress subscales to examine levels of compassion fatigue.

**Participants.** To be included in the study, participants had to be currently working as a therapist in any of the mental health subfields, such as mental health counseling, social work, clinical psychology, or counseling psychology. They could hold a doctorate or master's level



degree. To reduce the risk of type II error, this study was designed to achieve 0.80 probability of detecting a medium effect at the 0.05 level of statistical significance, which required a sample size of at least 85 office-based therapists (Cohen, 1992). A medium effect size was considered meaningful since time in nature is likely one of many variables that contribute to therapist levels of compassion fatigue and compassion satisfaction.

Similar to the office-based therapist sample, a sample size of 85 nature-based therapists would be needed to conduct correlational analysis with a 0.80 probability of detecting a medium effect at the 0.05 level of statistical significance. While the original intent of this study was to have two equal samples of office- and nature-based therapists, due to recruitment challenges, the optimal sample size of nature-based therapists was not achieved, and instead recruitment took place for a period of six months, and a final sample of 26 nature-based therapists was achieved. With such a small sample size, only large effects would be detected within the nature-based therapist sample.

Due to the nature of this study, the participants were likely to be well-educated, middle- to upper-class individuals. Additionally, to conduct nature-based therapy, therapists generally need to be able-bodied and tend to be younger. This is a likely constraint on the diversity of the subject pool for the nature-based therapists. Due to the relationship between the number of trauma cases on a caseload and symptoms of secondary traumatic stress, percentage of trauma cases on the therapists' caseload were examined as a potential factor for sample selection (Bober & Regehr, 2006). The secondary traumatic stress scores from participants who reported caseloads comprised of fewer than 20% trauma cases were compared to those participants who reported greater than 20% of trauma cases on their caseloads utilizing a box plot. Since the secondary traumatic stress scores did not differ significantly, the group with low

levels of trauma cases on their caseload were included in the study. This precaution ensured that differences in secondary traumatic stress across groups could not be attributed to lack of exposure to trauma narratives.

To be considered a member of the nature-based therapy group, the therapist must have included nature in therapy with at least half of their clients. This criterion ensures that the therapists included in the nature-based therapy group were consistently spending significant time in nature each week as part of their work; they may also be spending leisure time outdoors.

**Sampling.** To obtain the office-based therapist sample, all 50 United States were first placed in a randomizer, and a total of 30 states were randomly selected in order to increase the chance of a geographically diverse sample. Then, using websites such as Psychology Today and Google, I collected a list of over 500 individual therapists, group practices, and mental health organizations, such as community mental health centers and psychiatric hospitals. I contacted each of these therapists and organizations via email. Additionally, I sent my recruitment email to representatives from all state-level psychological associations within the American Psychological Association's Division 31. Included in the recruitment email was a request for the potential participants to pass the survey along to their colleagues. Thus, some recruitment occurred via word of mouth snowball sampling. See Appendix C for a copy of the email to potential participants.

To recruit the nature-based therapist sample, a list of nature-based therapists was compiled using Internet searches with key words (i.e., 'wilderness therapy,' 'adventure therapy,' 'nature-based therapy,' etc.). The contact information for approximately 115 individual therapists, group practices, and nature-based mental health organizations was gathered from this search. Each nature-based therapist and organization was emailed the recruitment email found in

Appendix C; 26 of these contacts completed the research protocol. While the nature-based therapist sample was comprised of therapists from a wide range of ages and degrees, they were predominantly males with a master's level education who worked in a rural area. Additional information about the demographics of this sample can be found in the Results section. Since the nature-based group is included in this study for exploratory purposes, I utilized all 26 responses gathered from this initial search and then concluded data collection. I collected data over the course of six months, from August to February.

**Measures.** The survey was created in Survey Monkey and included both a demographic questionnaire and the ProQOL. The demographic section inquired about the participants' age, gender identity, degree level, job setting, years working in mental health, location of workplace (i.e., urban, suburban, rural, wilderness), and type of outdoor activities participants engage in professionally and for leisure. Questions regarding workplace setting and number of hours spent outdoors professionally and personally were asked to ensure the participants were assigned appropriately to their group. See Appendix A for list of demographic questions listed in the questionnaire.

The ProQOL was used to measure burnout, secondary traumatic stress, and compassion satisfaction (Stamm, 2010). See Appendix B for a copy of the measure. It is a 30-item Likert scale survey that takes approximately seven minutes to complete. Including the informed consent and demographic information, it was expected that the participants would spend less than 20 minutes to complete the entire protocol. According to Survey Monkey, respondents took approximately nine minutes to complete the survey. The questionnaire was specifically developed for those in "helping" professions, thus, it was a good fit for therapists. Each question had response choices ranging from "1" Never to "5" Very Often, and it asked the respondent to

answer based upon their experiences over the last 30 days (Stamm, 2010).

Due to the ProQOL's use for a variety of helping professions, the developers constructed the questions using generic language, such as "I have thoughts that I am a 'success' as a *[helper]*" (Stamm, 2010). The manual informs researchers that changing the italicized words to best fit a specific profession is permissible (Stamm, 2010). Thus, I changed "helper" to "therapist" for this project. The remainder of the questionnaire utilizes the original language of the ProQOL.

To measure burnout, the ProQOL includes ten items, some of which are reverse scored and include statements like: "I feel worn out because of my work as a therapist," and "I feel 'bogged down' by the system." To measure secondary traumatic stress, the ProQOL has ten items, none of which are reverse scored. Examples of statements include: "I find it difficult to separate my personal life from my life as a helper," and "I can't recall important parts of my work with trauma victims."

Finally, there are ten questions to measure compassion satisfaction, none of which are reverse scored. Two sample items include: "I like my work as a therapist," and "I believe I can make a difference through my work" (Stamm, 2010).

The ProQOL developers reported Cronbach alpha coefficients of 0.88 for compassion satisfaction, 0.75 for burnout, and 0.81 for secondary traumatic stress (Stamm, 2010). In the ProQOL manual, Stamm (2010) describes the measure having "good construct validity," explaining that the measure has been published in 200 papers (p. 13). The developers also reported inter-scale correlations. They report that secondary traumatic stress and compassion fatigue have 2% shared variance, burnout and compassion fatigue have 5% shared variance, and secondary traumatic stress and burnout have 34% shared variance (Stamm, 2010). They attribute

the high level of shared variance between secondary traumatic stress and burnout to the level of distress that is seen in both conditions. However, they continue to assert that they are sufficiently different constructs as secondary traumatic stress includes fear, while burnout does not (Stamm, 2010).

To score the ProQOL, the first step was to reverse score items 1, 4, 15, 17, and 29. The complete ProQOL measure can be found in Appendix B. Once these items were reverse scored, the items within each subscale were added: Compassion satisfaction (items: 3, 6, 12, 16, 18, 20, 22, 24, 27, and 30), burnout (items: 1, 4, 8, 10, 15, 17, 19, 21, 26, and 29), and secondary traumatic stress (items: 2, 5, 7, 9, 11, 13, 14, 23, 25, and 28). The sum of each of the scales provides three z-scores. The z-scores were then converted into t-scores utilizing the Statistical Package for the Social Sciences (SPSS). Through this conversion, 50 became the mean score. The ProQOL manual provided SPSS code to complete this conversion.

On each of these scales, a t-score of 43 or less places the participant in the “low range” for compassion satisfaction, burnout, or secondary traumatic stress. A score between 44 and 56 is the “average range” for the scales, and a score of 57 or above is in the “high range.” A low score on compassion satisfaction indicates that respondents do not derive much satisfaction from their job, and perhaps experience satisfaction elsewhere. A high score on compassion satisfaction suggests that the respondent experiences “a good deal of professional satisfaction” from their job (Stamm, 2010, p. 17). A low score on the burnout scale indicates feelings of effectiveness in the workplace, and a high score suggests feelings of ineffectiveness. A low score on the secondary traumatic stress scale indicates minimal symptoms of trauma, and a high score suggests significant trauma symptoms.

**Procedure.** Sampling occurred via word of mouth snowball sampling utilizing the

method described above. Potential participants received an email with the project description and recruitment statement. See Appendix C for a copy of the email that was sent to potential participants. When a participant elected to participate in the study, they clicked a link to the Survey Monkey which brought them first to the informed consent.

The informed consent included a description of the purpose of the project, explaining that I sought to understand the connection between time in nature and therapist compassion. The informed consent also reviewed the potential risks and benefits to participating in the study. While little to no risk was anticipated for this professional sample, prospective participants were informed that they might become mildly uncomfortable or distressed when answering questions about experiences of secondary traumatic stress or burnout. However, this risk was likely outweighed by the benefit of potentially contributing to the literature on utilizing nature for self-care. The informed consent also reminded participants that their participation was voluntary, that they could stop at any time, and their information remained confidential. Lastly, the participants were informed of a raffle in which they could win a \$25 gift card for their participation in the study and the opportunity to get a summary of the analyzed data. See Appendix D for a copy of the informed consent.

After reading the information on the informed consent, the participant was prompted to provide their consent to participate. If they agreed to the informed consent, they clicked to the next page—the ProQOL questionnaire—which was followed by the demographic questions. See Appendix A for the demographic questions and Appendix B for the list of ProQOL questions. After the participant completed the demographic section, they were prompted to send me an optional email with the subject line “raffle” to enter into a raffle for \$25, and/or to receive a copy of the results when they are available. Participants were not required to provide their email

address, and thus, could choose to remain anonymous. By separately sending me an email, I was able to keep their identifying email address in a safe and separate location. This allowed the participant responses to be confidential.

I planned to keep the online survey open and to continue recruiting until I had at least 85 participants in the office-based therapist group and 85 in the nature-based group. However, the recruitment period to gather data from nature-based therapists took significantly longer than originally planned. Thus, recruitment for both groups continued for a total of six months, during which I was able to collect 150 responses from office-based therapists and 26 responses from nature-based therapists. Data collection concluded after six months, at which time I began data analysis.

**Analysis.** After the data were collected, responses were screened for outliers and missing values. Histograms were created to determine if the distribution for each measure was normal. Because the data for time in nature were skewed for both office- and nature-based therapists, nonparametric analyses were utilized. Following the initial data cleaning, the descriptive statistics—mean, median, and standard deviation—were calculated for both office- and nature-based therapist groups and each variable: compassion fatigue, burnout, and compassion satisfaction. A box plot was utilized to determine if therapist scores for secondary traumatic stress were related to the number of trauma cases on a participant's caseload. Then, a Spearman's correlation was conducted to determine if time spend in nature, a continuous variable, was correlated with levels of burnout, secondary traumatic stress, or compassion satisfaction for office-based therapists. Then, for exploratory purposes, a second Spearman's correlation was conducted to explore the same relationship between the same variables for nature-based therapists. The alpha level was set at  $p= 0.05$  for all analyses.

Following these analyses, I then conducted a series of post hoc analyses comparing office- and nature-based therapist responses to certain salient items, such as having a regular self-care routine, identifying as religious or spiritual, and mobility level. These analyses were included to examine if they are mechanisms that distinguish office- and nature-based therapists, and thus could potentially be confounding variables in comparisons between compassion fatigue and satisfaction levels across these two groups.

Additionally, I determined frequencies and percentages for the reported outdoor activities enjoyed by the participants to explore the most common types of activities. Additional post hoc analyses included exploring if time in nature was related to geographic setting (i.e., urban, suburban, or rural), as well as examining if the length a therapist's career impacted the presence of a regular self-care routine. These results will be discussed in the following section.

### **Results**

Utilizing a quasi-experimental design, this study explored the impact of spending time in nature on therapist levels of burnout and secondary traumatic stress—two indicators of compassion fatigue—as well as compassion satisfaction. A total of 157 therapists responded to the questionnaire on Survey Monkey. However, seven participants did not complete enough of the survey to be included in the analysis. A final sample of 150 participants (124 office-based therapists, 26 nature-based therapists) were included in the analysis. Skipped items resulted in sample sizes of 122 to 124 for office-based therapists, and 25 to 26 for nature-based therapists. Pairwise rather than listwise deletion maximized the amount of data retained for each analysis.

Of these participants, 64.4% identified as women, 33.6% identified as men, and 2% identified with other gender identities, such as genderqueer or gender non-conforming. The participants ranged in age from 23 to 72, with the mean age of 43 and a median of 40 years old.



The sample represented various mental healthcare disciplines (36.2% clinical psych, 22.8 % social work, 16.8% mental health counselor, 14.1% counseling, 4.7% marriage and family therapy, 0.7% psychiatry, and 4.7% other) as well as education levels (55.7% masters, 44.3% doctoral). The sample also represented a range of geographical settings (38% rural, 28% suburban, 34% urban). Please see Table 1 for a summary of sample characteristics.

Within the office-based therapist sample, 74% identified as women, 23.6% identified as men, and 1.3% identified as genderqueer or gender non-conforming. The office-based therapists ranged in age from 23 to 72 years old, with a mean age of 44 years old. The majority of participants reported identifying as mobile. They represented a wide range of mental healthcare disciplines, worked in a range of geographic settings, and 51% reported holding Doctorate degrees. Please see Table 1 for a summary of sample characteristics.

Within the nature-based therapist sample, 80.8% identified as men and 19.2% identified as women. The participants ranged in age from 29 to 64, with a mean age of 41 years old. All nature-based therapist participants identified as being mobile. Eighty-eight percent reported having a master's degree, while 12% reported having a doctoral degree. They represented a wide range of mental healthcare disciplines, and they majority reported working in a rural area. Please see Table 1 for a summary of sample characteristics.

Once the data was collected, it was cleaned and examined for outliers and skewness. The histogram for total time spent in nature for office-based therapists was positively skewed ( $M = 12.7$ ,  $SD = 11.9$ ,  $Skewness = 1.9$ ,  $Std\ Er = 0.2$ ,  $Kurtosis = 4.8$ ,  $Std\ Er = 0.4$ ). There were six outliers; a box plot can be seen in Figure 1. To address the skewness of the data, non-parametric statistics were used, which are less impacted by the skew. The total time spent in nature ranged from zero to 70 hours over the past two weeks for office-based therapists. See Table 2 for a summary of

office-based therapists' descriptive statistics. Burnout (M 50.2, SD 10.1), secondary traumatic stress (M 50.1, SD 10.1), and compassion satisfaction (M 50.1, SD 9.9) were all normally distributed. See Figures 2, 3, and 4 for the burnout, secondary traumatic stress, and compassion satisfaction histograms, respectively.

The histogram for total time spent in nature for nature-based therapists was also positively skewed (M= 50.1, SD= 38.2, Skewness= 2.563, Std Er= 0.464, Kurtosis= 9.298, Std Er= 0.902). See Table 2 for a summary of nature-based therapists' descriptive statistics. Time spent in nature for nature-based therapists ranged from 12-200 hours over the last two weeks. Similar to the office-based therapists, no transformations were done to correct the skewness. Rather, non-parametric tests were utilized instead. To examine if the groups differed significantly, the total time spent outside between office-based therapists and nature-based therapist was compared using a Mann-Whitney test. Unsurprisingly, there was a substantial and significant difference in time spent in nature between office-based therapists and nature-based therapists ( $U= 244.5$ ,  $\eta^2= 0.3$ ,  $p= 0.000$ ).

A box plot was used to compare secondary traumatic stress among office-based therapists' who reported less than 20% of trauma cases on their caseload, versus therapists who reported over 20%. While the group who saw more trauma cases reported slightly higher levels of secondary traumatic stress, 95% confidence intervals depicted in the boxplot overlapped substantially, indicating a lack of statistically significant difference. Thus, the therapists who reported less than 20% of trauma cases on their caseload were included in the remainder of the analysis to maximize the utilization of collected data. Please see Figure 5 for the box plot comparing impact of trauma cases on secondary traumatic stress scores.

### **Time in Nature was Correlated with Lower Levels of Compassion Fatigue for Office-based Therapists**

A Spearman's correlation was conducted to analyze the relationship between spending time in nature and levels of burnout, secondary traumatic stress, and compassion satisfaction. There was a small statistically significant negative correlation between time spent in nature and burnout ( $r = -0.228$ ,  $p = 0.011$ ) and secondary traumatic stress ( $r = -0.228$ ,  $p = 0.012$ ). In other words, as time in nature increased, levels of burnout and secondary traumatic stress decreased. The relationship between time spent in nature and compassion satisfaction was small and fell short of statistical significance ( $r = 0.151$ ,  $p = 0.098$ ). Additionally, burnout was moderately and reliably correlated with secondary traumatic stress ( $r = 0.506$ ,  $p = 0.000$ ) and substantially negatively correlated with compassion satisfaction ( $r = -0.653$ ,  $p = 0.000$ ). See Table 3 for a summary of these results.

### **Time in Nature was not Correlated with Compassion Fatigue or Compassion Satisfaction for Nature-based Therapists**

While the sample size of nature-based therapists was small, additional analyses were conducted for exploratory purposes. Spearman correlations indicated that the relationships between spending time in nature and levels of burnout, secondary traumatic stress, and compassion satisfaction were all of negligible size and below the threshold for statistical significance. There was a moderate negative correlation between burnout and compassion satisfaction for nature-based therapists ( $r = -0.452$ ,  $p = 0.02$ ). Additionally, secondary traumatic stress and burnout were substantially correlated for this group ( $r = 0.625$ ,  $p = 0.001$ ). Scatterplots were created to see if there were any patterns in the data. There was one outlier in each of the scatterplots, and the data clouds did not appear to have a pattern. See Figures 6, 7, and 8 for

scatterplots comparing time spent in nature and burnout, secondary traumatic stress, and compassion satisfaction, respectively.

### **Comparing Office- and Nature-based Therapists**

**Office- and nature-based therapists did not differ in levels of burnout, secondary traumatic stress, or compassion satisfaction.** A one-way between groups ANOVA was utilized to compare office- and nature-based therapists' scores on burnout, secondary traumatic stress, and compassion satisfaction. There was a small relationship between job setting and levels of compassion fatigue or compassion satisfaction, but it fell short of statistical significance (burnout:  $F= 1.784$ ,  $\eta^2= 0.01$ ,  $p= 0.184$ , secondary traumatic stress:  $F= 1.647$ ,  $\eta^2= 0.01$ ,  $p= 0.201$ , compassion satisfaction:  $F= 2.235$ ,  $\eta^2= 0.01$ ,  $p= 0.137$ ).

**Office- and nature-based therapists did not differ in religiosity, mobility, self-care, or autonomy.** A cross-tabulation comparison was utilized to compare office- and nature-based therapists' responses to questions about spirituality/religiosity, mobility level, regular self-care routine, and sense of autonomy. These analyses help determine if they are mechanisms that distinguish office- and nature-based therapists. The two groups did not significantly differ on any of these questions: spirituality/religiosity ( $X^2 = 0.176$ ,  $p= 0.675$ ), mobility level ( $X^2 = 2.286$ ,  $p= 0.131$ ), regular self-care routine ( $X^2 = 0.044$ ,  $p= 0.834$ ), and autonomy ( $X^2= 3.188$ ,  $p= 0.527$ ). While the effect sizes for spirituality/religiosity and regular self-care routine were negligible, there was a small effect for mobility level and sense of autonomy despite not reaching statistical significance.

**Additional findings.** In general, both office-based (41.8%) and nature-based therapists (53.8%) are "somewhat satisfied" with their time spent outside. However, nature-based therapists report being substantially more satisfied with their time spent outside than their office-based

counterparts ( $X^2= 10.779$ ,  $df= 4$ ,  $V= 0.27$ ,  $p= 0.029$ ). Forty-four percent of office-based therapists reported being very dissatisfied or somewhat dissatisfied with the amount of time they spend outside, while 15.4% of nature-based therapists reported feeling similarly. Forty-nine percent of office-based therapists report being somewhat satisfied or very satisfied with their time spent outside, while 76.9% of nature-based therapists report feeling similarly.

### **Post-hoc Analyses**

A one-way between groups ANOVA was utilized to compare time spent outside and geographic setting to explore if whether a person worked in an urban, rural, or suburban area was related to the amount of time they spent outside. Geographic setting was substantially and significantly related to time spent outside ( $F= 12.807$ ,  $p= 0.000$ ). The respondents who work in rural settings spend the most amount of time outside ( $M= 30.8$ ), followed by respondents working in suburban settings ( $M= 14.1$ ), and lastly therapists in urban areas ( $M= 10.4$ ). Mean differences were examined for all participants comparing mean time spent outside across geographic locations (i.e., rural, suburban, and urban). The mean time spent outside across settings significantly differed between urban and rural settings ( $I-J= 20.4$ ,  $Std\ Er= 4.3$ ,  $p= 0.000$ ) and suburban and rural settings ( $I-J= 16.7$ ,  $Std\ Er= 4.5$ ,  $p= 0.000$ ). The mean time outside did not differ significantly between urban and suburban settings ( $I-J= 3.7$ ,  $Std\ Er= 4.6$ ,  $p= 0.432$ ). See Table 4 for a summary of this analysis.

A one-way between-groups ANOVA was utilized to explore whether the length of time a therapist has been working in their career was related to the presence of a regular self-care routine. The relationship between these two variables was negligible and did not reach statistical significance ( $F= 0.0009$ ,  $p= 0.926$ ). Notably, nearly 80% of participants endorsed having a regular self-care routine. Additionally, participants were asked how they most often spend their

time outside. The most common responses included walking, walking the dog, hiking, and gardening/yardwork. Table 5 provides a list of additional common responses to this question.

## **Discussion**

### **Summary of Findings**

This study explored the impact of spending time in nature on therapist levels of compassion fatigue, comprised of burnout and secondary traumatic stress, and compassion satisfaction. The study primarily focused on therapists working in traditional office-based settings, but also included data from a group of nature-based therapists for exploratory purposes. It was hypothesized that for both office- and nature-based therapists, time in nature would be inversely related to burnout and secondary traumatic stress and directed related to compassion satisfaction. Utilizing a Spearman's correlation, time in nature was significantly and inversely related to burnout and secondary traumatic stress, but did not show a significant relationship with compassion satisfaction for office-based therapists. There was no relationship between time in nature and burnout, secondary traumatic stress, or compassion satisfaction for nature-based therapists.

In a comparison of office- and nature-based therapists, there were no differences in levels of burnout, secondary traumatic stress, or compassion satisfaction. Similarly, the groups did not differ in their reports of spirituality/religiosity, mobility level, engagement in a regular self-care routine, or sense of autonomy in their job. Additionally, nature-based therapists reported being more satisfied with the amount of time they spend outside as compared to office-based therapists.

A post-hoc analysis found a relationship between geographic location and the amount of time therapists spend outside with those working in rural areas spending the most time outdoors.

Lastly, length of career as a therapist was not related to the presence of a regular self-care routine.

### **Impact of Nature on Professional Quality of Life**

**Impact of time in nature on compassion fatigue and compassion satisfaction for office-based therapists.** The inverse relationship between time in nature and compassion fatigue for office-based therapists has the potential to inform self-care practices for therapists. With rates as high as 67% of mental health workers experiencing high degrees of burnout, reliable data on self-care strategies are needed to help mental health providers maintain their own wellbeing so they are able to improve the wellbeing of others (Morse et al., 2012). Additionally, rates of secondary traumatic stress, another contributing factor to compassion fatigue, can be equally as high for therapists working with traumatized individuals (Figley, 2002). Mental health providers are at particular risk for burnout due to the daily exposure to traumatic narratives (Newell & MacNeil, 2010). As a potential remedy for burnout and secondary traumatic stress, this study supports Hesse's (2002) recommendation that spending time in nature, such as "taking trips to the park, hiking, boating, camping, or even simply caring for pets or plants" can promote mental health and support therapist self-care (p. 303). Perhaps, it is not surprising that a potential antidote to the stress from hearing these stories while sitting indoors for the majority of the day is to go outside and spend time in nature, where, for example, there is space to attune to the larger perspectives of a forest as well as the individual experience of self within that forest.

While correlation does not imply causation, the relationship may suggest that time in nature may protect office-based therapists from compassion fatigue. However, it is also possible that therapists who engage in other activities that help protect them from compassion fatigue also spend more time in nature. Time in nature did not have any significant relationship with any of

the three dependent variables for nature-based therapists.

While this study did not identify the mechanisms through which nature supports mental health, perhaps turning to the nature-based therapy literature may provide some clues as to why spending time in nature is associated with lower levels of compassion fatigue in office-based therapists. One study defines the concept of “EcoWellness” as “one’s appreciation, respect for, and awe of nature that contributes to greater connection with one’s self and nature and resulting in holistic wellness” (Reese, Craig, Beyer, Gosling, & Hadeed, 2018, p. 3). Reese and his colleagues are not alone in their suggestion that being in nature creates a sense of connection both to place and self. Gabrielsen and Harper (2018) elaborate on this idea of ‘connection to place’ as a healing element of wilderness therapy programs. They explain that being in nature inspires thought of connection and how humans are a part of nature, themselves. Both of these ideas are reminiscent of E.O. Wilson’s (1984) biophilia hypotheses, that we are inherently attracted to nature because we, ourselves, are a part of nature.

The concept of nature’s ability to create a greater sense of connection as a potential mechanism of action parallels much of the psychotherapy literature about the importance of relationship both with the therapist (e.g., Wampold, 2015) and beyond. Indeed, many therapeutic approaches, especially those based in relational perspectives, focus on helping clients seek connections and relationships with others in their lives. David Abram (1996) explores this idea in his book, *The spell of the sensuous: Perception and language in a more-than-human world*. He explores how through the distancing from the natural world, humans have lost touch with our ability to utilize our sense to connect with the natural world. He asserts that by attending to the natural world through the senses, humans can build relationships with and develop new perspectives about the natural world. Perhaps, with additional research and empirical support,



nature can be included as another type of relationship therapists help clients cultivate—as well as a relationship therapists cultivate for themselves.

Despite this study's finding that increased time in nature is associated with lower levels of compassion fatigue, there was no relationship between time in nature and compassion satisfaction. Thus, it seems that while nature may be related to lower levels of burnout and secondary traumatic stress, it does not promote a sense of effectiveness or gratification in therapeutic work. There are many possible explanations for this finding. Perhaps the leisure time therapists spend after work or on the weekends is too far removed from their therapeutic work to be associated with one another. While taking a break from thinking about the trauma narratives they are exposed to during the work day may be effective in reducing burnout and secondary traumatic stress, it may not provide insight into how the therapist can be more effective the next time they are in the therapy office. While the literature on compassion fatigue is sparse, many of the identified predictors for compassion satisfaction are associated with training or the working environment, such as level of experience, supportiveness of management, or specialized training in trauma treatment (Craig & Sprang, 2010; Sodeke-Gregson et al., 2013; Sprang et al., 2007). Thus, while time in nature may increase wellbeing, it may not impact a therapist's sense of effectiveness in their work.

**Impact of time in nature on compassion fatigue and compassion satisfaction for nature-based therapists.** Time in nature was not associated with levels of compassion fatigue or compassion satisfaction for nature-based therapists. This finding was likely affected by the small sample size of nature-based therapists. The suggested sample size to detect a medium effect size at the 0.05 level is 85 participants (Cohen, 1992). With only 26 nature-based therapists, the sample size was less than a third of the suggested sample. Beyond the small sample, it is possible

that since nature-based therapists combine their time in nature with their work, they associate nature and work. Similarly, they may not experience the same sense of taking a break when they go into nature because they frequent nature settings often.

**Comparing office- and nature-based therapists.** The burnout, secondary traumatic stress, and compassion satisfaction means were all in the average range for both office- and nature-based therapists. In other words, the participants in this study did not represent a wide range of burnout, secondary traumatic stress, or compassion satisfaction scores. While the means for burnout and secondary traumatic stress in office-based therapists were in general three points higher than nature-based therapists, and the mean compassion satisfaction score for office-based therapists was three points lower than nature-based therapists, these differences were not significant in the one-way between groups ANOVA comparing the burnout, secondary traumatic stress, and compassion fatigue scores between office- and nature-based therapists.

There are a couple possible explanations for this finding. Perhaps therapists who are more burnt out or experiencing higher levels of secondary traumatic stress are less likely to participate in studies, and thus there was a narrow span of scores across burnout, secondary traumatic stress, and compassion satisfaction. It is possible that a sample comprised of a wide range of burnout, secondary traumatic stress, and compassion satisfaction scores would show a significant difference between groups. Additionally, the limited sample size of nature-based therapists may have contributed to the statistically non-significant relationship. It is possible that additional research exploring compassion fatigue and compassion satisfaction across larger groups of office- and nature-based therapists would be beneficial in determining if nature-based therapists are more likely to have lower levels of compassion fatigue and higher levels of compassion satisfaction.

**Mechanisms of difference between office- and nature-based therapists.** In the event that there was a significant difference between compassion fatigue and compassion satisfaction levels in office- and nature-based therapists, this study included questions to explore potential mechanisms of difference. These questions, such as identifying as spiritual or religious, engaging in a regular self-care routine, mobility level, and sense of autonomy over work schedule, could help illuminate possible third variables that may distinguish office- and nature-based therapists. This study did not find a significant difference between office- and nature-based therapists for any of these items. Thus, spirituality, engagement in self-care, mobility level, and a sense of autonomy did not distinguish the two groups. However, with the small sample size of nature-based therapists, future research is needed to confirm these findings with a more robust sample.

### **Exploration of Post-hoc Analyses**

**How therapists spend time outside.** While it was unsurprising that nature-based therapists reported higher levels of satisfaction with the amount of time they spent outside, the degree to which office-based therapists reported dissatisfaction is notable. Nearly half of the office-based therapists reported being very dissatisfied or somewhat dissatisfied with the amount of time they spent outside. Thus, it seems that there is a desire to spend more time outdoors among office-based therapists.

The motivations behind this desire are not known, nor are the obstacles they face when trying to increase their outdoor time. However, it is possible that therapists recognize nature's ability to support mental health; perhaps this desire is another indication of E.O. Wilson's biophilia hypothesis. It is also possible that these therapists have positive memories of spending time outdoors—maybe even thinking of it as vacation time as opposed to work—and thus have a positive association to their hours spent in nature. While there can be a multitude of motivations

behind this desire, it is clear that therapists could benefit from further research exploring barriers to spending time in nature, such as difficulty accessing natural spaces or a lack of time.

While there are many therapists who wish to increase the amount of time they spend outside, more than half of the office-based therapists reported being neutral, somewhat satisfied, or very satisfied with the amount of time they spend outside. Perhaps these therapists have greater access to natural settings or place a high value on their time outdoors, so they make an effort to go outside. Additionally, this study collected data across three seasons (summer, fall, winter) and from participants living across the country. Thus, it is possible that those who felt satisfied with their time spent outside lived in a more temperate climate or responded early on during the warmer months.

This study asked therapists to share their favorite outdoor activities. A comprehensive list of these activities can be found in Table 5. Walking outdoors was by far the most common activity that participants enjoyed. Going for a walk, walking a dog, and hiking were the top three common reported activities with nearly half of the respondents reporting enjoying one or more of these activities.

This finding supports the idea that spending time outdoors does not need to involve equipment or extensive skill but can be accessed by the vast majority of people. However, it is essential to acknowledge that accessibility can be dependent on physical ability status as well as socioeconomic factors. For example, therapists who experience challenges with mobility may have a more difficult time getting outdoors for a walk. Additionally, those living in low-income and impoverished areas may have less access to green spaces such as parks and forests. These are important considerations that place a social justice lens on the assertion that access to nature supports mental health.

Global climate change is another social justice issue that will likely continue to impact human's access to and interaction with the natural world. With changing coastlines, flooding, and stronger storms, the natural landscape is changing at a rapid pace. Additionally, it is known that vulnerable populations frequently experience greater devastation from the results of global warming, such as natural disasters (Clayton, Manning, Krygsman, & Speiser, 2017). While in-depth exploration into this issue is beyond the scope of this study, the impact of climate change on the relationship between humans and nature may well become a significant issue for both therapists and therapy in the future. For example, therapists may encounter more frequent presentations of stress-related disorders stemming from the impact of climate change and may experience some of those symptoms of stress themselves.

Geographic location is another factor that impacts how frequently therapists are able to access nature. This study found that across nature- and office-based therapists, participants working in rural areas spent more time outdoors than those in suburban or urban areas. Perhaps this is an unsurprising finding. However, in a country and world that is continuing to become more urbanized with people continuing to move towards large cities and away from rural areas, this finding may have significant implications (United Nations, 2018).

With overpopulation in cities, there will be a greater need to find creative ways to incorporate nature into city life. Fortunately, some cities seem to recognize the importance of having green space. For example, New York City's Parks Department has developed an initiative to increase access to parks throughout the city (New York City Department of Parks & Recreation, 2019). Their goal is that by 2030, 85% of New Yorkers will be able to walk to a park. Currently, 81% of New Yorkers are able to do this. The Trust for Public Land (2018) is a national organization that provides yearly reports on access to parks in 100 United States (U.S)

cities. As a comparison, New York ranked number nine on their list in 2018. Minneapolis was number one, Los Angeles was 66th, and Charlotte came in last. Beyond creating green spaces within cities, there may be still greater need for intentional retreats to nature. This is occurring in Japan, where business men, in particular, spend their weeks taking a train out of the large cities, such as Tokyo, and going to forest bathing parks to reap the benefits of spending time in nature (Williams, 2017).

**Length of career and engagement in self-care.** The final post-hoc analysis in this study explored the relationship between length of career and the presence of a regular self-care routine. This study found no significant relationship between these two variables. While the statistic was non-significant, it is a positive finding. With nearly 80% of participants endorsing having a regular self-care routine, it seems that therapists are able to establish self-care strategies throughout their career.

### **Challenges and Limitations**

**Recruitment challenges.** Recruitment, specifically the recruitment of nature-based therapists, proved to be a challenge in this project. It was my initial hope to include enough nature-based therapists to meaningfully compare both office- and nature-based therapists. However, after six months, only 26 nature-based therapists participated in the study. My recruitment efforts included emailing individual nature-based practices, joining and messaging nature-based therapy listservs, and utilizing social media platforms to join and message multiple nature-based therapy groups. In total, I reached out to 115 individuals, groups, and organizations. Notably—and perhaps coincidentally—the response rate was approximately 23% for both office- and nature-based therapists.

One barrier to recruitment was likely the smaller population of nature-based therapists as

compared to office-based therapists. Even including all forms of nature-based therapy—adventure therapy, wilderness therapy, horticulture therapy, and equine therapy—nature-based modalities comprise a comparatively new subsection of psychotherapy and thus there are many fewer nature-based therapists.

Further, and perhaps attendant to my recruitment challenges, I discovered that many people working as nature-based therapists do not have a graduate degree; indeed, many do not even identify as nature-based “therapists.” For example, when I contacted Outward Bound, a major adventure-based program, I receive a response that they did not do “therapy.” However, they have trips for “grieving teens” as well as “struggling teens and adults” (Outward Bound, 2019). Similarly, a representative from an equine therapy organization responded to my recruitment request explained that there were no master’s or doctoral level clinicians in her organization. Easing the therapy-definition and education criteria might have increased my sample size, but also would have introduced more variability into the data.

Another potential factor that may have contributed to the low sample size of nature-based therapists is that these therapists are simply not spending much time indoors and on their computers. Rather, they are in nature working with their clients. Since the vast majority of my recruitment efforts were conducted via email, it is possible that nature-based therapists would be less inclined to spend 10-20 minutes on their computers filling out a survey. By comparison, office-based therapists may be on and off their computers all day long to fill out paperwork and write notes; perhaps the online survey was less burdensome for them.

Due to these barriers, the compassion fatigue and satisfaction of nature-based therapists still remains a topic worthy of future exploration. Perhaps more creative recruitment methods, such as connecting personally with nature-based organizations or internal evaluations of

nature-based therapists' experiences would be helpful in collecting data.

**Limitations in operational definitions.** Throughout this study, the words 'outdoors' and 'nature' have been utilized synonymously, which is a limitation of the study. While the definitions of these terms have much overlap, they are not equal. The choice to use the word interchangeably was to allow for the inclusion for as much outdoor activities as possible; however, it may have led to confusion for participants. For example, someone may walk outdoors to work each morning in a city, and not access green space at all. They would be outdoors but not in nature. As discussed in the literature review, studies have found that walking in green spaces has greater mental health benefits as compared to walking in urban environments without green space (Bratman et al., 2015; Harting et al., 2003). The ambiguous language may account for the absence of a significant difference between the amount of time spent outside across urban and suburban settings. It is possible that people in urban settings may be spending quite a bit of time outside, but not reaping the benefits of spending time in nature. Thus, in future studies, identifying and defining specific words and language may be helpful in increasing the precision of findings.

Additionally, the questionnaire in this study did not ask participants to specify how they spent their time in nature over the last two weeks. It is possible that some participants sat on their porch while others went for a trail run or strenuous hike. This raises a potential confound of physical activity. It has been shown that exercise is a powerful protective factor. Thus, it is possible that some participants may have had inflated scores on the ProQOL questionnaire due to the added benefit of exercising outdoors. Future studies could begin to tease these variables apart to determine if they boost the benefits. For example, would the participants on the porch gain the same benefit as those on the strenuous hike?



**Relevance of this Study**

The human relationship with nature is an antidote for an increasingly urbanized and industrialized world. It can offer relief from the disconnection and alienation associated with depression, anxiety, and addiction. For example, in an article exploring how technology use and urbanization are impacting rates of depression and anxiety in adolescents, Gabrielsen and Harper (2018) suggest how core wilderness therapy elements can be translated on an individual, group, and societal level to rebuild a connection with the outdoors. They suggest, in a manner similar to Paul Shepard's (1982) argument over two decades ago, that the global trends towards urban life and technology use are pulling us away from nature. They assert, boldly, that rebuilding the human-nature connection may actually help resolve some of the current mental health challenges adolescents face. Specifically, they suggest that changing the values around the importance of having access to a "green(er)" world with reduced air, noise, and light pollution, educating groups about the benefits of spending time in nature, and advocating for legislative change to support this are some ways to re-establish a relationship with nature to improve adolescent mental health (Gabrielsen & Harper, 2018).

Additionally, information about the positive benefits of spending time in nature is beginning to pique the interest of the general public. In the last five years, over 20 books have been published discussing the positive relationship between spending time in nature and mental wellbeing. Much of these books are written for a broad audience, such as Florence Williams' (2017) *Nature fix: Why nature makes us happier, healthier, and more creative* and Sara Ivens' (2018) *Forest therapy: Seasonal ways to embrace nature for a happier you*.

While these topics are just beginning to be discussed in depth in this country, the U.S. is in actuality much further behind many other countries in its promotion of the intentional use of

outdoor spaces for wellbeing. For example, the concept of *friluftsliv* or *open air life* in Scandinavia is leading to new forms of therapy, as well as the similar Japanese idea of *shinrin-yoku* or *forest bathing*. Around the world, the public seems to be recognizing the growing separation between humans and the natural environment and seeking ways to find reconnection. Thus, building of an evidence base for nature-based therapies is essential to support this growing interest.

### **Implications for Practice**

The findings of this study complement and add to the literature suggesting spending time in nature is advantageous for mental health and wellbeing, adding therapists to the list of possible beneficiaries. For therapists hearing numerous trauma stories, it may be very helpful to understand that time spent in nature is associated with lower levels of compassion fatigue.

However, given the correlational nature of this research, it is also possible that those with lower levels of compassion fatigue may also have other sources of resiliency, too. For example, they might have more energy and mental space to spend time outside, or engage in other indoor self-care practices like meditation, exercise, supervision, or have close relationships that further protect them from compassion fatigue. While additional research is needed to explore the directionality of the relationship, it is evident that time spent outdoors and in nature makes a difference for those who seek it out. Should there actually be a protective component to spending time in nature, this finding could be utilized in the literature promoting therapist self-care and combatting compassion fatigue; it should be a topic of conversation in graduate training programs and in clinical supervision.

However, these data raise an important additional question about the best dose of nature needed for the documented benefit. For busy psychotherapists to engage in this form of self-help,

dosing information would surely be helpful. Some studies are beginning to examine this question. A recent study found that spending 20 to 30 minutes in an “outdoor place that brings a sense of contact with nature” just three times a week is associated with lower levels of stress for people living in urban areas (Hunter, Gillespie, & Chen, 2019, p. 1). Another study found reduced mental fatigue following a 50-minute walk in a natural setting (Bratman et al., 2015). A third study in Japan found that engaging in forest bathing for 11-21 minutes reduced cortisol levels, pulse rate, and blood pressure (Park et al., 2009). Thus, the dosage for time in nature remains varied; although there is evidence to suggest people experience a reduction in stress levels after less than an hour outside and in as little time as 11 minutes.

### **Directions for Future Research**

As discussed in the literature reviews and throughout this discussion, there are many areas for future research. As a growing field of inquiry, nature-based approaches for mental health and the mechanisms through which nature impacts wellbeing still need exploring.

**Spirituality as a mechanism of action.** One notable area for future research is the relationship between nature and spirituality. Although beyond the data of this study, the connection between spirituality and time in nature might be another explanation for the way the natural world mitigates compassion fatigue. For example, Reese and his colleagues (2018) suggest that spirituality is a therapeutic factor that improves wellbeing when in nature or on a wilderness therapy trip. They assert that “people transcend themselves in the presence of nature and have a greater ability to connect with other and one’s sense of spirituality;” they connect this idea to Theodore Roszak’s (1992) argument for an ecological unconscious (p. 5). In a review of the literature exploring the benefits of interacting with nature, Keniger and her colleagues (2013) report that spending time in nature is associated with a greater sense of “connectedness to a

broader reality,” feelings of inspiration and spiritual growth (p. 926). These sentiments are echoed by Carl Jung, who writes “Natural life is the nourishing soil of the soul” (Sabini, 2002, p. 120).

Notably, this study did not find a mean difference between office- and nature-based therapist’s endorsements of being spiritual or religious. While much is written anecdotally and poetically about the impact of nature on the therapist’s soul, additional research is needed in this area to further understand if spirituality is a mechanism through which nature impacts mental wellbeing. In other words, does being in nature inspire a sense of spirituality and connectedness to something greater?

**Other forms of self-care.** While this study examined the use of time in nature as a potential method of self-care, further research is needed to support the efficacy of a variety of self-care strategies. With nearly 80% of participants engaging in self-care, relatively average levels of burnout and secondary traumatic stress, and some therapists reporting minimal amount of time in nature, it seems likely that those therapists who are not utilizing nature for self-care are finding other methods. For example, comparing two groups of therapists with low levels of burnout and secondary traumatic stress—those who spend significant time outdoors and those who seldom go outside—we might determine a broad range of effective self-care strategies. Future research could explore the array of strategies that therapists engage in and examine the effectiveness of each for reducing compassion fatigue.

**Exploring dissatisfaction with amount of time in nature and barriers to access.** This study found that a considerable number of office-based therapists wished they could spend more time in nature. It would be worth exploring both the motivations behind this desire as well as the barriers that may prevent them from spending more time outdoors. In addition to learning why

therapists want to spend more time outside (e.g., to recreate positive memories; to get fit; to relax) exploring the motivations may illuminate how therapists come to learn about the positive effects of being in nature. For example, is it the positive childhood memory of running around at the beach; did they recently read a new journal article about the benefits of being in nature; or did they come across this message in the media? It is possible that they may encounter messaging around the positive effects of nature in a variety of places, however, understanding a more effective method of sharing information about the benefits of nature may help inform further dissemination of the information.

### **Conclusion**

In an exploration of the impact of spending time in nature on therapist levels of compassion fatigue and compassion satisfaction, this study found that for office-based therapists, spending more time in nature is correlated with lower levels of compassion fatigue including both burnout and secondary traumatic stress. There was no relationship between time in nature and compassion satisfaction for office-based therapists; when comparing office- and nature-based therapists, there was no significant difference in levels of compassion fatigue or satisfaction. However, these findings comparing the two groups were hindered by the small sample size of nature-based therapists; thus, further research is needed in this area.

Overall, this study complements the literature supporting the benefit of spending time in nature on wellbeing, extending the evidence base to include therapists at risk of compassion fatigue. The practice of psychotherapy has its foundations in the healing properties of relationships. It is fitting that a connection with the natural world provides the possibility of both prevention and cure for the stresses most therapists endure, such as sitting indoors, bearing witness to client's trauma narratives, and grappling with our own sense of purpose.

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Tables

Table 1

*Sample Description*

Demographic	All Participants N (%)	Office-based Therapists N (%)	Nature-based Therapists N (%)
<b>Gender</b>			
Female	96 (64.4)	91 (74.0)	5 (19.2)
Male	50 (33.6)	29 (23.6)	21 (80.8)
Gender non-conforming	3 (2.0)	3 (1.3)	0 (0)
<b>Spiritual/Religious</b>			
Yes	97 (65.1)	81 (65.9)	16 (61.5)
No	52 (34.9)	42 (34.1)	10 (38.5)
<b>Physical Mobility Status</b>			
Mobile	138 (93.2)	112 (91.8)	26 (100)
Somewhat Mobile	10 (6.8)	10 (8.2)	0 (0)
Impaired	0 (0)	0 (0)	0 (0)
<b>Degree Field</b>			
Clinical Psychology	54 (36.2)	53 (43.1)	1 (3.8)
Social Work	34 (22.8)	24 (19.5)	10 (38.5)
Mental Health Counselor	25 (16.8)	18 (14.6)	7 (26.9)
Counseling Psychology	21 (14.1)	16 (13)	5 (19.2)
Marriage and Family	7 (4.7)	6 (4.9)	1 (3.8)
Psychiatry	1 (0.7)	1 (0.8)	0 (0)
Other	7 (4.7)	5 (4.1)	2 (7.7)
<b>Degree Level</b>			
Master's	83 (55.7)	61 (49.2)	22 (88)
Doctoral	66 (44.3)	63 (50.8)	3 (12)
<b>Job Setting</b>			
Office-based	124 (82.7)	124 (100)	26 (100)
Nature-based	26 (17.3)	0 (0)	0 (0)
<b>Geographical Setting</b>			
Urban	51 (34.0)	50 (40.3)	1 (3.8)
Suburban	42 (28.0)	39 (31.5)	3 (11.5)
Rural	57 (38.0)	35 (28.2)	22 (84.6)

Table 2

*Descriptive Statistics for ProQOL*

Measure	Office-Based Therapists			Nature-Based Therapists		
	M	SD	Median	M	SD	Median
Burnout	50.2	10.1	49.7	47.3	8.9	45.5
Secondary Traumatic Stress	50.1	10.1	48.3	47.3	8.3	48.3
Compassion Satisfaction	50.0	9.9	52.1	53.1	7.3	52.1
Time in Nature	12.7	12.0	10	50.1	38.2	40.0

*Note.*  $n = (150)$

Table 3

*Correlation Between Burnout, Secondary Traumatic Stress and Compassion Satisfaction with Time Spent Outdoors for Office-based Therapists*

		Time Spent Outdoors	Burnout	Secondary Traumatic Stress	Compassion Satisfaction
Time Spent Outdoors	Spearman's Rho	1	-0.228*	-0.228*	0.151
	Sig. (2-tailed)		0.011	0.012	0.098
	N	122	122	122	122
Burnout	Spearman's Rho		1	0.506**	-0.653**
	Sig. (2-tailed)			0.000	0.000
	N		124	124	124
Secondary Traumatic Stress	Spearman's Rho			1	-0.123
	Sig. (2-tailed)				0.172
	N			124	124
Compassion Satisfaction	Spearman's Rho				1
	Sig. (2-tailed)				
	N				124

*Note.* \*p < 0.05.

*Note.* \*\*p < 0.01.

Table 4

*Mean Difference of Time Spent Outdoors Across Geographic Settings*

	M	SD	Urban	Suburban	Rural
Urban	10.4	8.6	1	3.7 p= 4.6	20.4* p= 0.000
Suburban	14.1	14.4		1	16.7* p= 0.000
Rural	30.8	32.5			1

*Note.* \*p < 0.05.



Table 5

*List of Common Outdoor Activities*

Activity	Frequency (%)
Walking	67 (19.6)
Walking the dog	47 (13.8)
Hiking	42 (12.3)
Gardening/Yard work	34 (10.0)
Cycling, biking, mountain biking	20 (5.9)
Running	19 (5.6)
Pool/swimming	13 (3.8)
Playing with Kids	13 (3.8)
Beach	13 (3.8)
Sitting/Relaxing	13 (3.8)
Boating	11 (3.2)
Skiing/snowboard	11 (3.2)
Writing/Reading	5 (1.5)
Doing Therapy	5 (1.5)
Climbing	4 (1.2)
Camping	4 (1.2)
Eating/Cooking	3 (0.9)
Bird watching	2 (0.6)
Sports	2 (0.6)
Golf	2 (0.6)
Other	11 (3.2)

Figures

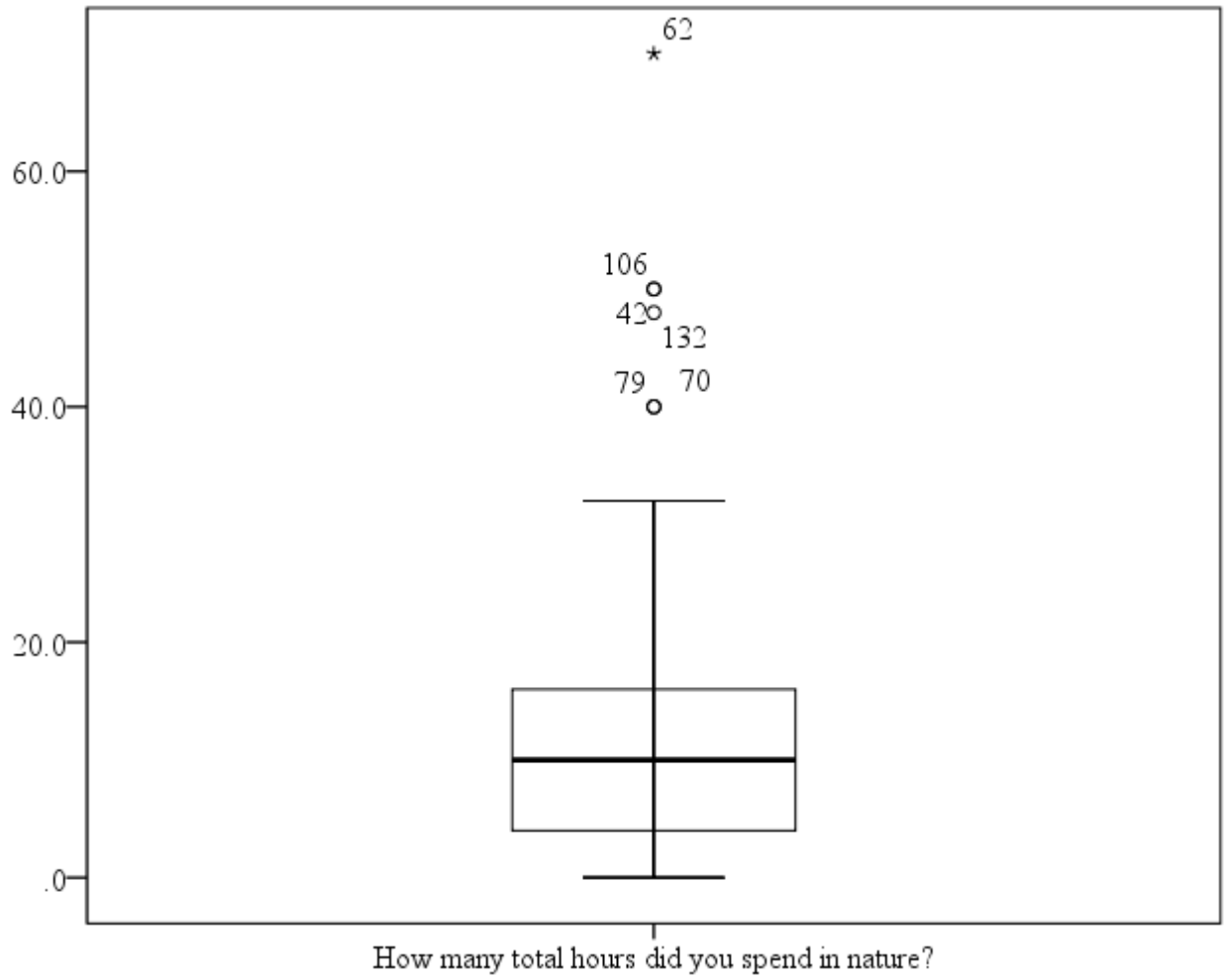


Figure 1: Office-based therapists time in nature boxplot

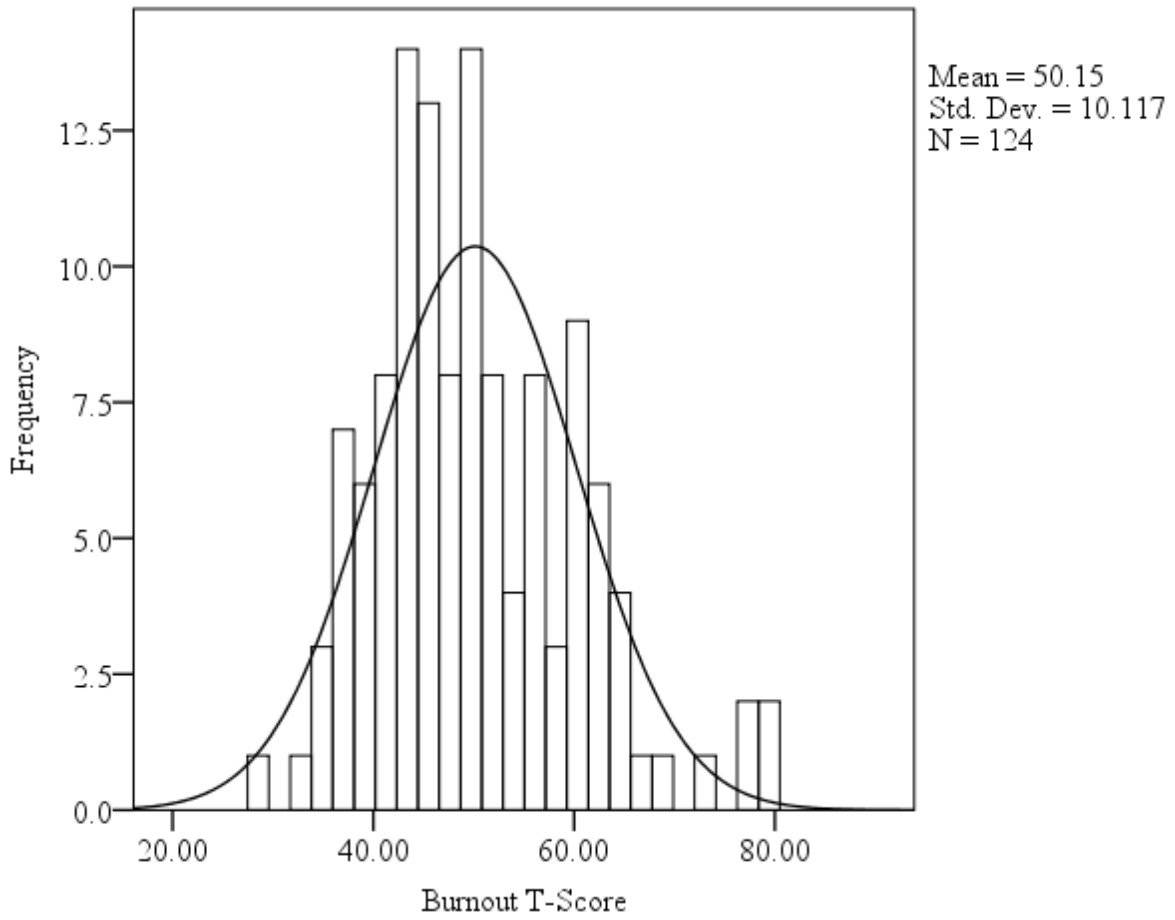


Figure 2: Office-based therapists burnout histogram

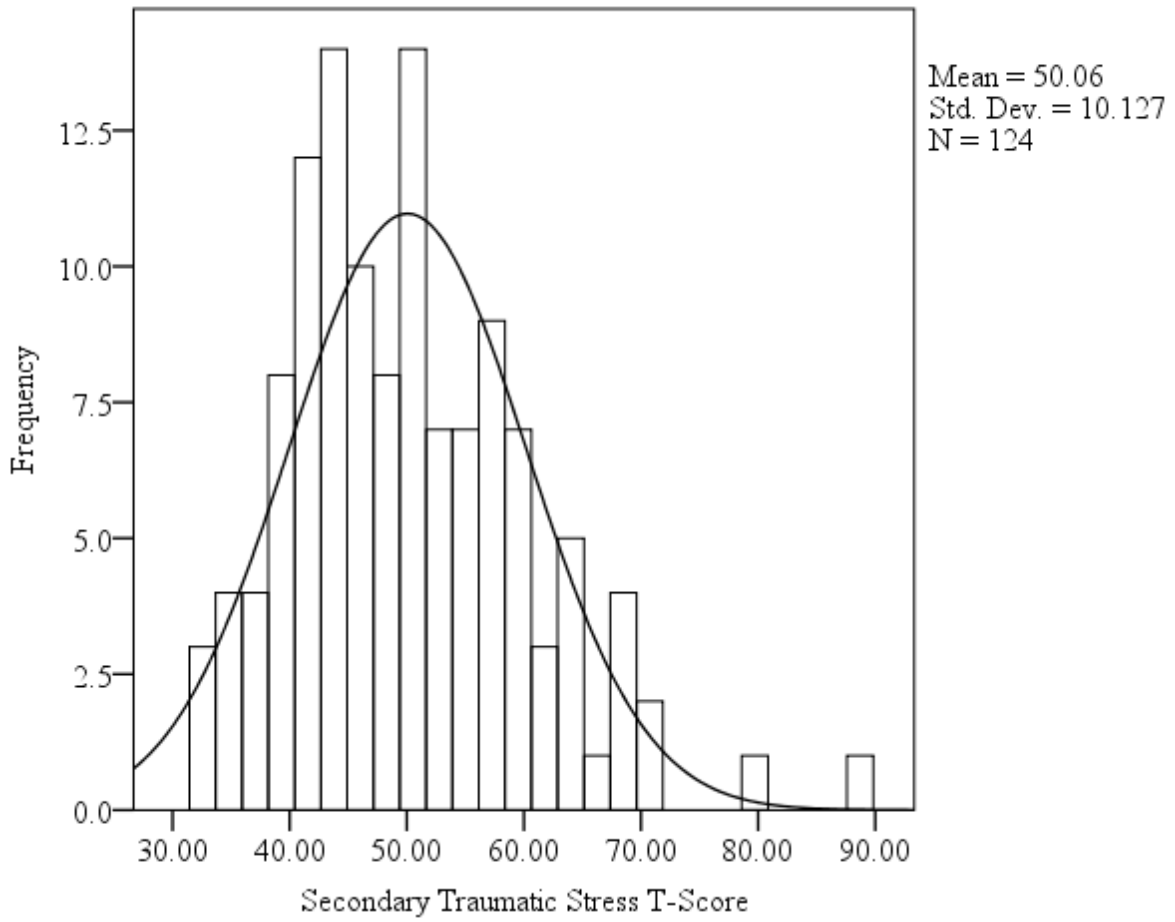


Figure 3: Office-based therapists secondary traumatic stress histogram

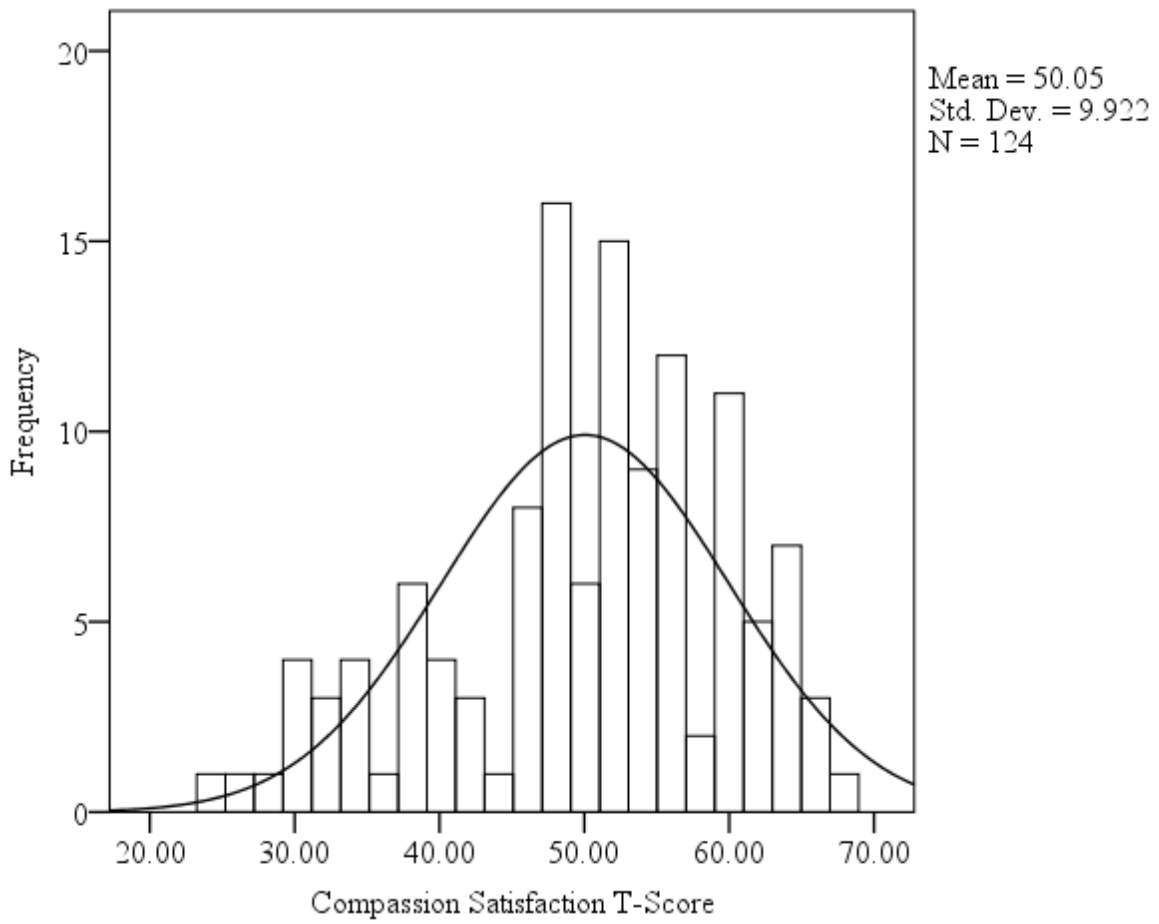


Figure 4: Office-based therapists compassion satisfaction histogram

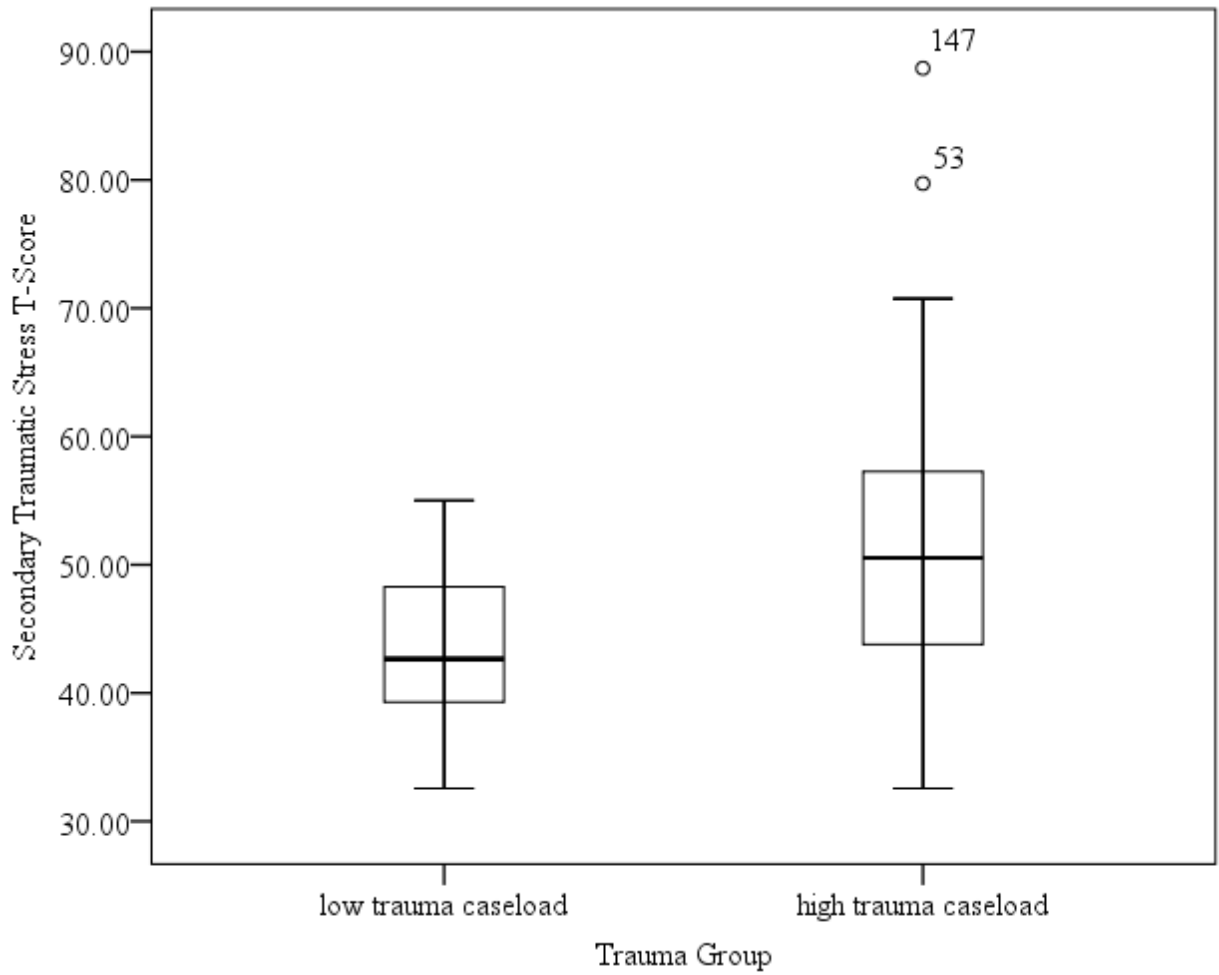


Figure 5: Low trauma versus high trauma caseloads not significantly associated with secondary traumatic stress

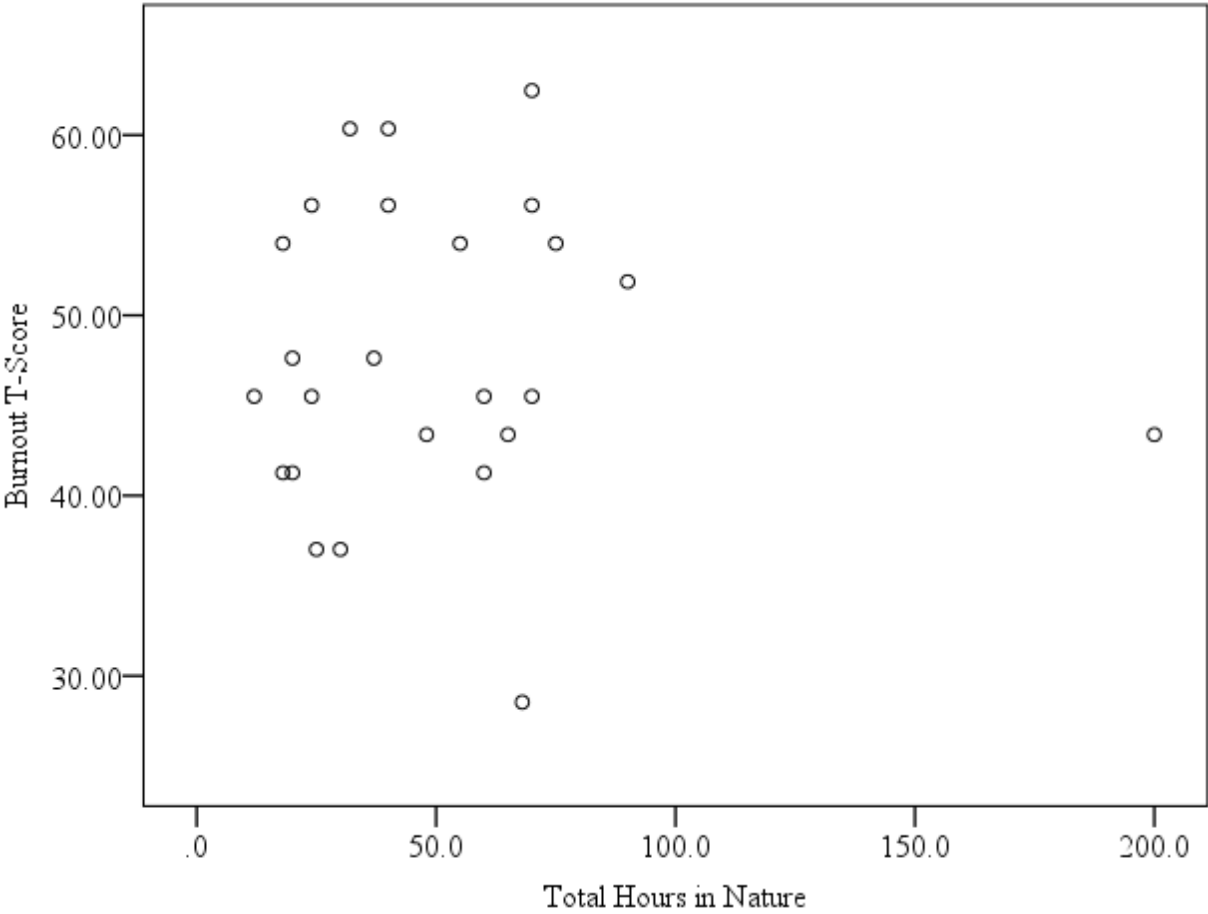


Figure 6: Burnout and time spent in nature scatterplot for nature-based therapists

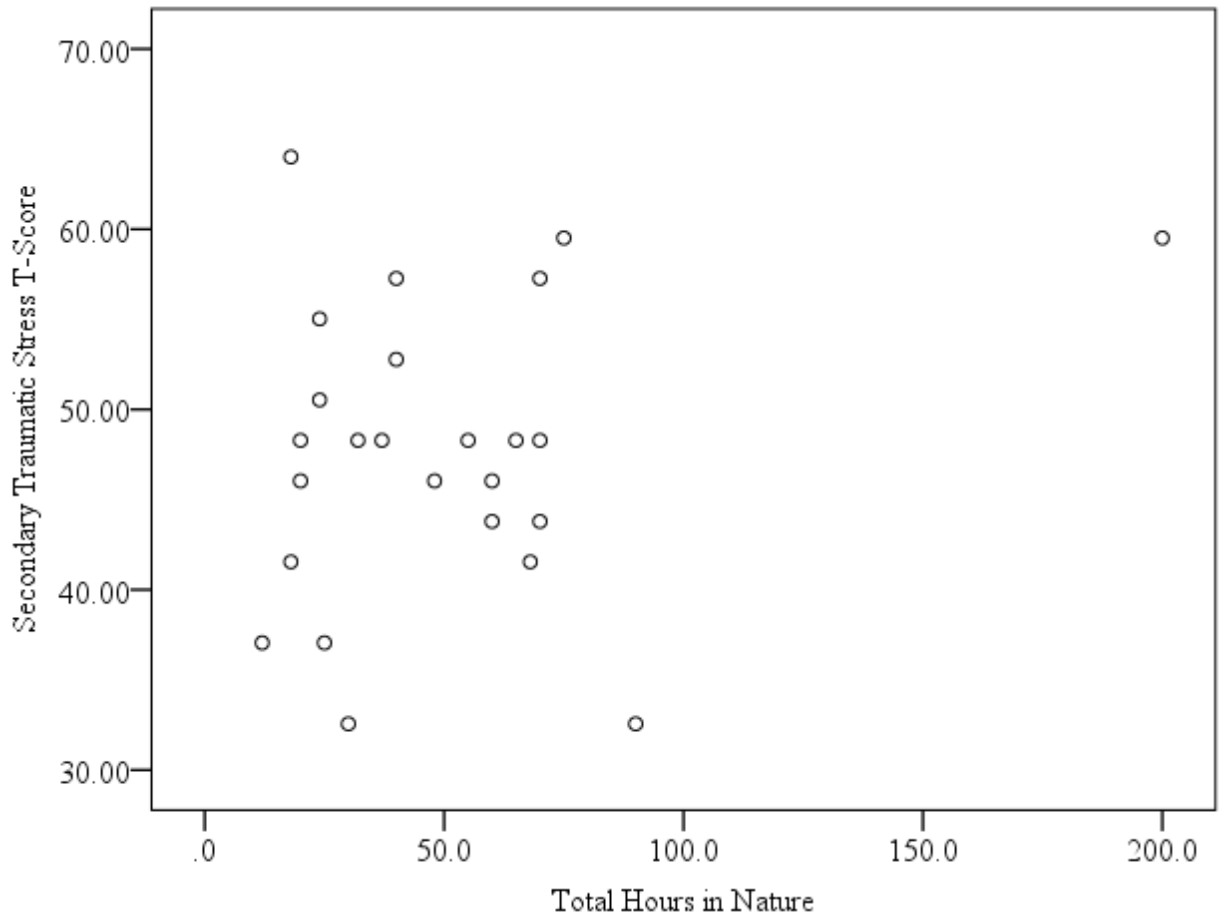


Figure 7: Secondary traumatic stress and time spent in nature scatterplot for nature-based therapists



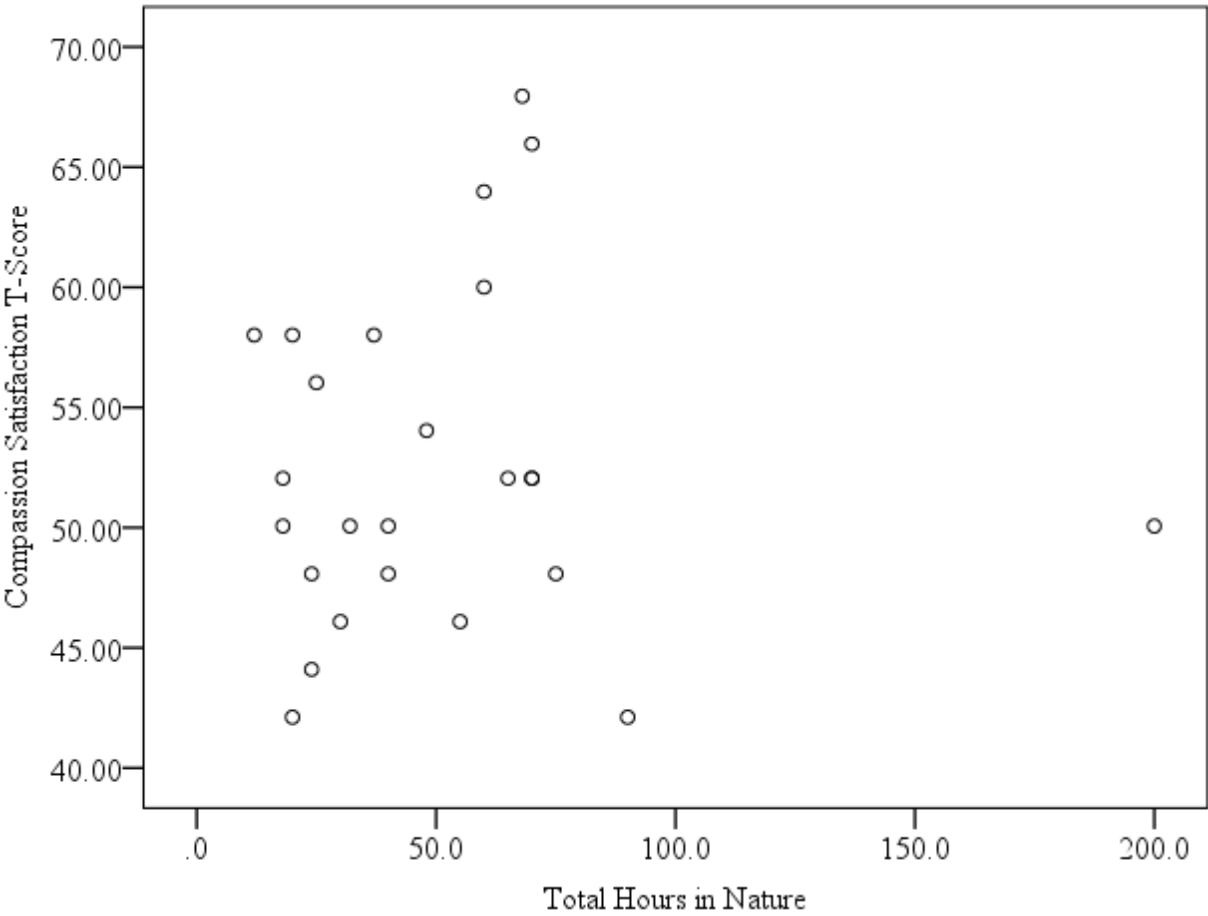


Figure 8: Compassion satisfaction and time spent in nature scatterplot for nature-based therapists

## Appendix A: Demographics

**What is your age?**

\_\_\_\_\_ years old

**What is your gender identity?**

Female

Male

Transgender

Other: \_\_\_\_\_

**Would you describe yourself as spiritual or religious?**

Yes

No

**How would you describe your physical mobility level?**

Mobile (no current injuries/disabilities)

Somewhat mobile (some injuries/disabilities, but able to get around)

Impaired (experience significant difficulty with mobility)

**What field is your professional degree in?**

Licensed Mental Health Counselor

Marriage and Family Therapy

Social Work

Counseling Psychology

Clinical Psychology

Psychiatry

Other: \_\_\_\_\_

**What is the level of your professional degree?**

Master's level

Doctoral level

**What is your job setting?**

Primarily indoor (i.e. Outpatient Clinic, Inpatient Hospital, Indoor Residential Facility, School, Medical Hospital, Private Practice)

Primarily outdoor (i.e. Adventure therapy program, Wilderness therapy program, Other outdoor therapy program)

**What geographical setting is your workplace located in?**

Urban

Suburban

Rural

**How long have you been working as a therapist?**

Number of years: \_\_\_\_\_

**Do you have a regular self-care routine?**

Yes

No

**How much autonomy do you have over your work schedule?**

Very little autonomy

Little autonomy

Neutral

Some autonomy

Significant autonomy

**Over the last two weeks:**

**How many total clients did you see?**

Number of clients: \_\_\_\_

**What percentage of your caseload was represented by clients who have been traumatized?**

\_\_\_\_\_ percent

**How many clients did you see in an indoor setting?**

Number of clients: \_\_\_\_

**How many clients did you see in an outdoor setting?**

Number of clients: \_\_\_\_

**Over the last two weeks:**

**How many total hours did you spend in nature?**

Number of hours: \_\_\_\_

**How many hours did you spend in nature for work?**

Number of hours: \_\_\_\_

**How many hours did you spend in nature for leisure?**

Number of hours: \_\_\_\_\_

**How many hours did you spend in nature for specific goal (i.e. walking to work or the store, walking the dog, performing a chore)?**

Number of hours: \_\_\_\_\_

**Were the last two weeks a typical representation of your time spent indoors versus outdoors?**

Yes

No

**How do you (most often) spend your time outdoors? (i.e. walking the dog, hiking, beach/pool, etc.)**

\_\_\_\_\_

**Are you satisfied with the amount of time you spend in nature?**

Very dissatisfied

Somewhat dissatisfied

Neutral

Somewhat satisfied

Very satisfied

## Appendix B: The Professional Quality of Life Scale, Version 5 (2009) (ProQOL 5)

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 therapist. 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= Never            2= Rarely            3= Sometimes            4= Often            5= Very Often

- \_\_\_ 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 after working with those I help.
- \_\_\_ 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 therapist.
- \_\_\_ 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 therapist.
- \_\_\_ 11. Because of being a therapist, I have felt “on edge” about various things.
- \_\_\_ 12. I like my work as a therapist.
- \_\_\_ 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.
- \_\_\_ 16. I am pleased with how I am able to keep up with therapy 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 therapist.
- \_\_\_ 20. I have happy thoughts and feelings about those I help and how I could help them.
- \_\_\_ 21. I feel overwhelmed because my caseload 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 experience of the people I help.
- \_\_\_ 24. I am proud of what I can do to help.
- \_\_\_ 25. As a result of being a therapist, I have intrusive, frightening thoughts.
- \_\_\_ 26. I feel “bogged down” by the system.
- \_\_\_ 27. I have thoughts that I am a “success” as a therapist.
- \_\_\_ 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 C: Email to Potential Participants

Hello,

My name is [REDACTED], and I am a doctoral student in the Clinical Psychology program at Antioch University New England. I am seeking participants for my dissertation study examining how spending time outside impacts levels of compassion satisfaction and compassion fatigue in therapists. If you are a master's or doctoral level therapist please consider completing the survey and brief demographic questionnaire attached to the link below. Completing the questionnaire will likely take less than 20 minutes. The survey is confidential and voluntary.

[Link to Survey Monkey](#)

I appreciate your consideration of the study. Please feel free to distribute this email to your colleagues.

Sincerely,

[REDACTED]

## Appendix D: Informed Consent

**Taking Therapy Outdoors: Nature's Impact on Therapist Compassion**

**I am a doctoral student from the clinical psychology department at Antioch University New England. I would like to invite you to take part in a research study about the impact of spending time outdoors on therapist levels of compassion fatigue and compassion satisfaction.**

The goal of this study is to understand if spending more time outside is associated with an increase in compassion satisfaction and decrease in compassion fatigue for therapists. I am seeking therapists who work in traditional office settings who spend minimal amount of leisure time outdoors, traditional setting therapist who spend large amounts of leisure time outdoors, and therapists who engage in nature-based therapy. The information obtained will be used to help inform self-care practices for therapists and add to the literature on how job setting impacts therapist wellbeing.

**If you agree to take part, you will be asked to complete a short survey and a demographic questionnaire that will take approximately 15-20 minutes of your time. The questionnaire includes questions about your work setting, time spent in nature, and levels of compassion fatigue and compassion satisfaction.**

**The information you provide will be combined with information from other participants. Neither you nor anyone else taking part in the study will be named or identified. Your information will be kept entirely confidential. No one will know that you participated in the study unless you share that information yourself.**

**While participating in this study does not directly benefit you, the information you provide will help add to the literature on the effects of spending time in nature on therapist wellbeing. Additionally, you will be helping to discover if nature can be better utilized as a source of self-care for therapists.**

**After participating in this study, you have the option to send me an email (thus providing your email address) to be entered into a raffle to win a \$25 gift card. Your email address will be kept in a locked file separate from the data. If you desire, by emailing me you can also ask me to send you the results from this project when the data are available.**

**There is a small possibility that you may experience discomfort in responding to items that inquire about the stress you experience from your job. Other than possible discomfort in thinking about your job stress, we do not anticipate any risk to you. In the case that the questionnaire or specific items on it are too stressful, you are welcome to skip any question or stop filling out the questionnaire.**

**Your participation will remain confidential and anonymous.**

Your name will not appear on any form. If you choose to send me an email to enter the raffle and/or a summary of the analyzed data, your email will be temporarily saved in a

locked file, and will be deleted following the raffle. No reports about this study will contain identifying information.

**Taking part is voluntary.**

**If you have any questions about the study, you may contact [REDACTED] via email at [REDACTED]. Please put “Nature Study” in the subject line of any email you send.**

**If you have any questions about your rights as a research participant, you may contact [REDACTED], Chair of the Antioch University New England Institutional Review Board at [REDACTED] or [REDACTED].**

**Thank you for helping us understand how spending time in nature impacts therapist compassion satisfaction and fatigue.**

I agree to take part in the Antioch University New England study about the impact of spending time outdoors on therapist levels of compassion fatigue and compassion satisfaction.

By clicking Agree, you are consenting to participate.