

RELATIONSHIPS AMONG LEISURE STRESS COPING BELIEFS AND
STRATEGIES, PERCEIVED STRESS AND HEALTH, AND PERSONALITY
DURING COVID-19

by

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DEDICATION

This work is dedicated to my family and friends, but especially to my dogs.

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I would like to express my gratitude to my thesis committee chair, Dr. Brenda Wiggins, and committee members, Dr. Laurence Chalip, Dr. Christine Green, and Dr. Ellen Rodgers for sticking by me during the longest year.

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ABSTRACT

RELATIONSHIPS AMONG LEISURE STRESS COPING BELIEFS AND STRATEGIES, PERCEIVED STRESS AND HEALTH, AND PERSONALITY DURING COVID-19

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This thesis explores the relationships among leisure stress coping beliefs and strategies, perceived stress and health, and personality during the COVID-19 pandemic. Beginning March 2020, the U.S. Center for Disease Control (CDC) implemented social distancing guidelines to slow the spread of coronavirus. The World Health Organization and CDC have issued statements urging individuals to protect their physical and mental health by staying active, remaining socially connected, and doing things they enjoy (WHO, 2020; CDC, 2020a). Iwasaki and Mannell's (2000) Hierarchical Dimensions of Leisure Stress Coping Model, a Perceived Stress Scale modified to measure COVID-19 related stress, perceived health measurement (EQ-VAS), and an abbreviated Big Five Inventory were used to survey participants online. The data showed that leisure mood enhancement and tangible aid are dimensions of leisure stress coping that are positively correlated with lower stress perception and higher health perception, along with the

personality trait of agreeableness. Implications of these findings include considerations in therapeutic recreation practice, health protective recommendations, and future research of leisure as an adaptive coping skill.

CHAPTER ONE

Introduction

There is vast and intimate familiarity with stress as it relates to the COVID-19 pandemic. The World Health Organization (WHO) describes COVID-19 as a newly discovered coronavirus disease which spreads through respiratory droplets (World Health Organization, 2020). Covid-19 spreads mainly among people who are in close proximity, so in response, social distancing measures were implemented to slow the spread of the virus. These measures include wearing masks, frequent hand washing, keeping a distance of six feet from others, and avoiding crowds or large groups of people (CDC, 2020a). The precautions drastically impacted multiple aspects of life, spurring financial, occupational, recreational, medical, and social lifestyle disruptions and modifications. The demand of behavior modification, in addition to health and safety concerns, resulted in complex and widespread stress, compounded by social and physical isolation, for individuals across the globe (Salari, 2020).

The Commonwealth Fund, a foundation which promotes healthcare access, quality, and efficiency for vulnerable populations, reports that anxiety and depression had tripled in the United States during the year 2020 (Getachew et al., 2020). Additionally, more than half of people surveyed across seven countries by the International Committee of the Red Cross (ICRC) report that COVID-19 had a negative impact on their mental

health (ICRC, 2020). Social distancing guidelines created access barriers to mental health services and medication as communities contended with dynamic loss (Salari, 2020).

Dr. Bernice Sachs (1991), a pioneer in psychosomatic medicine, found that nearly sixty percent of provider visits any year are prompted by stress-related symptoms which can impair the immune system and exacerbate illness. However, she felt that adequate coping could bolster resilience and safeguard health (Sachs, 1991). Several health consequences related to stress include increased incidence of heart disease, high blood pressure, obesity, and diabetes (Mayo Clinic Staff, 2019).

During the pandemic, both the WHO and the Center for Disease Control (CDC) recommended several measures to maintain physical and mental wellness. Among these are social connections with others, physical activity, and engaging in enjoyable leisure (WHO, 2020; CDC, 2020b). Safety guidelines had restricted and modified the way in which people engage in the suggested health-protective measures. For decades, leisure scientists have suggested leisure as a means of buffering and mediating stress to protect health. Pressman et al. (2009) describe how past research has focused on specific activities rather than general characteristics, such as enjoyment, and one's relationships to stress and health. Additional studies have sought to find mediators between stress and health, for example, mental wellbeing and physical activity (Teh et al., 2015). One research construct, the Hierarchical Dimensions of Leisure Stress Coping Model, framed by Iwasaki and Mannell (2000), has been utilized to explore various aspects of leisure as a means of counteracting stress to maintain or improve health. The dimensions are grouped into leisure coping beliefs and leisure coping strategies, and include self-

determination, empowerment, emotional support, tangible aid, information support, esteem support, companionship, mood enhancement, and palliative coping (Iwasaki, 2000). Research data employing this model may assist leisure scientists, recreation professionals, psychologists, healthcare providers, counselors, social workers, and city planners to better understand how to meet the mental health needs of the community during pandemics and other times of crisis. The findings may also have implications for therapeutic recreation practice and others who would empower individuals to effectively cope with stress and self-advocate. Additionally, individual disposition and personality should be considered as some people tend to thrive during challenging circumstances or while social distancing. Walker, Kleiber, and Mannell (2019) explain that personality is more likely to influence behavior in leisure contexts than any other context and that extroverts find more enjoyment from activities with others while introverts prefer solitary activities. This would be confirmed if the social variables have a positive relationship with extroversion. Despite Iwasaki's model and scales demonstrating significant validity and reliability, research using this tool has been somewhat limited. Information about how leisure may protect health during times of extreme duress, such as a pandemic, is a timely and valuable addition to the existing body of knowledge.

Purpose of the Study

The purpose of this study is to assess the relationships among leisure stress coping beliefs and strategies, perceived stress and health, and personality.

Research Questions and Hypotheses

RQ1: What is the relationship amongst leisure stress coping beliefs and strategies, perceived stress, and perceived health?

Based on an extensive review of research, it is hypothesized that:

1. perceived stress will be negatively correlated with perceived health;
2. the leisure stress coping belief of self-determination and the leisure stress coping strategy of companionship will be negatively correlated with perceived stress; and
3. the leisure stress coping belief of empowerment will be positively correlated with perceived health.

RQ2: How does personality relate to the dimensions of leisure stress coping, perceived stress, and perceived health?

4. It is hypothesized that introversion will be negatively correlated with emotional support, esteem support, leisure companionship and with perceived stress, and that openness to experience will be negatively correlated with stress.

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CHAPTER TWO

Literature Review

COVID-19 and Stress

Stress is a very common yet incredibly impactful occurrence in the human experience and may be defined as a condition which requires a change in behavior (Comer, 2014). People are continually met with demands or stressors, and opportunities for reactions or stress responses. These stressors may include everyday experiences like traffic and parenting, or more traumatic events such as natural disasters and war. One's response to stress is influenced by how they judge the event and their ability to react. People who believe they have adequate ability and resources tend to cope well with stress (Comer, 2014). This is due, in part, to a dimension of personality called locus of control. People with an internal locus of control believe they command their own outcomes, while people with an external locus of control believe that luck or other outside forces largely control their outcomes (Walker, et al., 2019). Research has shown locus of control to be a significant factor in coping with stress as well as physical and mental health throughout the lifespan (Heckhausen, 2006).

There are many types and sources of stress such as environment, relationships, occupation, finances, and health. An acute stressor is one that lasts for minutes to hours, which often activates the sympathetic nervous system, or the "fight or flight" response (Porter, 2016). Chronic stress, whether it is real or perceived, lasts over a long period,

from days to months. Chronic stress will activate hormones which alter body functions in order to divert energy to dealing with the stressor. The body will increase production of cortisol which impacts functions including immune system suppression, changes in memory and concentration, exacerbation of existing conditions, reduced metabolism, and deteriorating mood, to name just a few (Dhabhar & McEwen, 1997; Mayo Clinic Staff, 2019).

It should be noted that although extreme stress can be a precursor to stress-associated disorders, such as Post Traumatic Stress Disorder (PTSD), the focus of this research is on stress as a normal outcome of COVID-19. Some researchers have identified clusters of pandemic-specific stress as COVID Stress Syndrome (CSS) and responded by developing scales by which to measure this phenomenon and identify individuals in need of treatment (Brenner, 2020; Taylor, 2020). Another new measure is the Coronavirus Anxiety Scale which employs a five-point time-anchored item scale to assess social attitudes, psychological effects, maladaptive coping, and functional impairment (Lee, 2020). The researcher designed the scale to diagnose dysfunctional anxiety as a psychological disorder.

Not all stress is negative. Eustress is a type of demand for which a person exerts a high degree of control and desire to meet the demand (Porter, 2016). Eustress may provide an opportunity to practice creative problem-solving and experience mastery, control, and self-efficacy, which can act as a buffer in future stressful events (Cooper, 2013). Vocation, recreation, and leisure pursuits may offer eustress to participants. Other factors that contribute to stress are alcohol consumption, diet, exercise, nicotine, sleep,

health, electronic device hygiene, and work ethic (Porter, 2014). There are several defense mechanisms people use to cope with stress, which are either adaptive or maladaptive. In addition, proactive coping is expended by some to mitigate anticipated future stressors (Aspinwall & Taylor, 1997).

There are a multitude of ways to cope with stress, some of which are more effective and more conducive to good health than others. Maladaptive coping mechanisms, in contrast, pose significant increase in risks. Pollard, Tucker, and Green (2020) recently published results of a study confirming a sharp increase in heavy alcohol consumption during social distancing practice. In response, the WHO warned against excess drinking as it could adversely affect immune response and deteriorate physical and mental health (*Alcohol does not protect against COVID-19; access should be restricted during lockdown*, 2020).

Since COVID-19 social distancing measures were initiated throughout the United States (U.S.) beginning in March 2020, considerable research has been conducted to investigate how the outcomes of the pandemic have affected various populations. There is no doubt that the widespread and lasting changes that individuals and organizations had implemented have been a complex source of chronic stress. This has been not only a shared experience across society, but a well-documented phenomenon. Additionally, although the effects of the pandemic are felt by most, some populations are disproportionately affected.

Healthcare providers are a group which have experienced compounded hardship and mental health challenges during the pandemic (Pearman et al., 2020b). Exacerbating

factors include increased risk of exposure to COVID-19, shortages in personal protective equipment (PPE), changes in workplace policy and increased hours on the job, as well as increased physical and emotional demands. Pearman conducted a survey of healthcare professionals and non-healthcare professionals in the early months of the pandemic and found that healthcare workers were significantly more anxious and depressed than their non-healthcare peers. They often felt less in control and more tired but scored the same as non-healthcare peers for COVID-19 related stress (Pearman et al., 2020b). Stress-coping training and focus on rewards are the authors' suggested solutions for this population.

Pearman et al. (2020a) conducted a one-time online survey of 515 adults ages 20-79 and found that older adults reported more anxiety regarding COVID-19 than younger and middle-aged adults, but that proactive coping was associated with lower stress levels in older adults. In contrast, Klaiber et al. (2020) identified younger adults as having higher negative effects of COVID-19 related daily stress, such as threat to health and finances. Seven-hundred seventy-six Americans and Canadians ages 18-91 completed a nightly survey for one week. The outcomes in both studies ascertained that older adults had developed greater coping efficacy. Klaiber et al. (2021) notes that older adults were more likely than their younger counterparts to report physically distanced positive activities. These activities included time spent in nature, remote social engagement, and positive events within their social networks. This indicates a possible need for proactive coping skills education in younger adults, but also that populations who have experienced coping with stress are better equipped for stress coping even in situations where they are more adversely affected.

Wang et al. (2020) surveyed a pool of 2,031 Texas A&M undergraduate and graduate students about their COVID-19 related stress. Participants' ages ranged from 18-75 years, with a mean age of 22.9 years. Doctoral students reported the lowest incidence of stress increase, while sophomores reported the highest. The most influential themes included difficulty concentrating, stress about grades/graduation, worries about personal health or health of loved ones, and changes in sleeping and eating patterns. There were also reports of stress due to social distancing/isolation, limited access to resources and services, and financial worries. A few participants (n=109) responded that their stress had decreased and cited less commuting, extracurricular activities and other commitments as factors. In all, less than half of the respondents (43 percent) reported being able to cope while the rest were either unable to manage or unsure. While the most common coping strategies reported were social support and technology, such as social networking apps, nearly 20 percent reported using no coping mechanism.

Another group experiencing amplified impacts are people with disabilities, who compile the largest marginalized group in the U.S. at about 61.4 million people or a quarter of the country's population (Okoro et al., 2018). Lund (2020) reviewed ways in which people with disabilities are predisposed to increased sources of stress as they relate to COVID-19. It is acknowledged that compromised access to medical care and equipment, such as ventilators, has been a source of stress, as well as compounding factors related to race, trauma, isolation, and poverty (Lund et al., 2020). The author suggests intra/interpersonal strategies in addition to systemic strategies to overcome barriers and disparities. The individual-based strategies mirror those of the general

population-physical activity, self-care, self-compassion, social support, and mental health care. However, ableism and barriers to access may disproportionately limit resources. People with disabilities may need to anticipate caregivers contracting COVID-19 or navigating telehealth and virtual social support groups with a visual, hearing, or cognitive impairment. Lund suggests that systemic solutions include the inclusion of psychologists and policy makers with disabilities, of which this population is underrepresented, because they can better identify with and help plan for the barriers individuals face (Lund et al., 2020).

In addition to physical and intellectual disabilities, mental health conditions have also amplified the impact of COVID-19 stress for many Americans. Asmundson et al. (2020) conducted an online self-report survey with 6854 adults, ages 18–94 years. This survey combined Taylor’s COVID Stress Syndrome Scales (CSS) with the Patient Health Questionnaire-4 (PHQ-4) and additional questions about isolation, distress, and coping. The authors found that people with pre-existing mental health conditions were at an increased risk of stress (CSS indicators), which confirms a general assumption that aspects of social distancing guidelines have disproportionately impacted people with mental health conditions (Asmundson et al., 2020). The authors also attributed loss of social capital as a barrier to coping strategies, but the survey results indicated that people with pre-existing mental health conditions rated themselves higher in coping strategies than their non-disordered peers. Perhaps people with previous mental health conditions are better educated on stress-buffering strategies due to therapeutic interventions, so that

even though they are more susceptible to stress, they are also equipped with proactive coping tools.

Another group of people well-versed in coping and resilience are police officers. Stogner, Miller, and McLean (2020) examined historical data as it relates to current stress mitigation in law enforcement departments. Events such as the HIV epidemic and 9/11 have served as learning experiences for how law enforcement professionals can better cope with stress and trauma. In addition to workplace programs to improve mental health, yoga and meditation initiatives such as Tactical Yoga and Yoga for First Responders were developed. The authors suggest two courses of action to mitigate future stress: preparation for future viral outbreaks by being adequately supplied, and training to improve positive coping skills. In fact, Iwasaki studied leisure coping in police officers because they are required to develop resilience to extreme stress and trauma.

Iwasaki, Mannell, Smale, and Butcher (2002) detailed three studies of law enforcement personnel, which covered several domains: health, stressors, general coping, leisure coping, and outcomes. The study found that leisure coping has a positive relationship with both immediate outcomes, such as satisfaction and stress reduction, as well as long-term outcomes such as physical and mental health. The author noted that general (non-leisure) coping was significant in predicting immediate outcomes and physical outcomes, but not mental health outcomes. Iwasaki et al. points out that leisure as a coping strategy has been largely ignored by researchers and called for a broader approach to stress coping studies including leisure coping and meaningful activities.

Getachew et al. (2020) highlighted the many ways in which population segments are adversely affected by the pandemic. The authors discovered that about half of Latinx and Black participants recounted economic challenges, 39 percent of women reported major mental health concerns 15 points more than men, individuals with low income reported mental health concerns 20 points higher than those with high income, and Latinx and Black individuals reported COVID-related mental health concerns 10 points higher than White individuals (Getachew et al., 2020). In another study, Probst et al. (2020) stated that those with less job security were disproportionately negatively impacted by scarcity and economic stressors, as well as having health behaviors that did not comply with public health guidelines.

For minority and marginalized populations, COVID-19 has been an additional source of stress to pre-existing factors. According to Lund et al. (2020), health disparities in racial and ethnic groups are at an increased risk because chronic conditions such as diabetes and heart disease are more prevalent. The author also describes how environmental and economic disparities have revealed that practicing social distancing is a privilege. Racism and prejudice were noted as another source of stress. Some minorities experience healthcare discrimination as limiting access to care or as a factor in medical supply rationing. Incidents of hate crimes and xenophobia, particularly against Asian-Americans, increased in 2020, causing additional fear and stress (Crouche, Nguyen, & Rahmani, 2020).

Finally, a meta-analysis of COVID-19 related stress studies within the general population were conducted to identify themes. This research illustrated that people who

follow pandemic news closely are more likely to have anxiety, especially if the news is less fact-based. This is problematic because people with higher media exposure are at greater risk for stress, yet people are also encouraged to socialize using social media, which is notorious for spreading false information and rumors (Chao et al., 2018). In addition, Salari and colleagues (2020) performed meta-analyses to confirm previously determined conclusions: that people with poorer health have more stress surrounding COVID-19, women are more susceptible to COVID-related depression and stress, and that even though older adults are at an increased risk, young adults' rate higher in stress levels. Interestingly, their study also discovered that higher education was associated with higher stress, which would seemingly contradict previous statements regarding how job security has impacted health, however the author attributes this to greater self-awareness.

The implications of COVID-19 related-health impacts and social distancing guidelines have penetrated nearly every facet of life across the globe. The resulting effects on stress and wellbeing have been well-established by researchers during the pandemic. Given the widespread mental health concerns and limited access to services and resources, there is a need to identify ways in which individuals can protect their own health. The existing research into how leisure beliefs and activities impact stress can be expanded upon to better understand the relationships during this pandemic and perhaps applied to future stressful events.

Leisure, Perceived Stress, and Perceived Health

Since the pandemic had presented a high degree of change and adjustment, a look at how negative life events impact health is warranted. Research using stress inventories has helped researchers conclude that generally, barring some environmental factors, events do not cause health problems but that certain personality traits influence reactions and behaviors which cause health problems (Aronson et al., 2019). In short, the subjective situation is more influential than the objective situation when determining the effects on health, including how one interprets challenges in their life and how they feel about their ability to cope. Aronson and associates explain that negative interpretations directly affect the body's immune system, making it more susceptible to illness. In Cohen, Tyrrell, and Smith's (1991) research, the study subjects with higher perceived stress were more likely than their lower-stress peers to become ill after being given a nasal spray containing a cold virus or placebo.

As described previously, a sense of control or feeling of being in charge are important factors in making healthy decisions. Some people feel more in control than others however perceived control can vary daily (Aronson et al., 2019). Mannell's (2007) overview of works revealed that leisure provides more opportunity to exercise control than other areas of life, such as work. Moreover, he cites research which support the idea that leisure choices have a direct impact on health. His meta-analysis comparing various studies on physical and sedentary activities alike find that both types of activity are associated with lower mortality. Mannell attributes this to the discretionary nature of leisure and to the psychosocial support networks that develop during leisure time.

Leisure is not guaranteed to protect and improve health. There are cultural and individual factors to consider as well as the nature of the activity chosen. Some leisure pursuits can be harmful to health and wellbeing. However, many studies have confirmed that various aspects of leisure provide benefits such as enhancing self-esteem, providing a sense of meaning and purpose, distraction from negative emotions, improving quality of life, and supporting personal psychological growth, all of which may mediate stress and health (Mannell, 2007). Many of these factors are measured in the Asian Mental Well-Being Scale (AMWB) which was utilized in a study about stress, well-being, and health. Teh and associates (2015) tested whether mental well-being mediates perceived stress and perceived health by surveying 200 undergraduates in Singapore using the Perceived Stress Scale, Health Status Questionnaire, and AMWB. It was found that mental well-being mediated the relationship between perceived stress and perceived health, but that high perceived stress was associated with lower mental well-being which is associated with poorer perceived health. The researchers concluded that alleviating stress and cultivating mental well-being as a protective factor are important public health measures.

Unfortunately, leisure is more likely to be a casualty of negative life events than a solution for coping with them (Kleiber, Hutchinson, & Williams, 2002). However, Kleiber, et al. speculate that negative life experiences, such as a crisis, could cause one to prioritize experiences and relationships over work and material gains. Their analysis of available texts concluded with four main ideas regarding the use of leisure in transcending negative events: 1) enjoyable experiences offer distraction from painful emotions 2) leisure generates optimism about the future, 3) leisure helps people “get back

to normal”, and 4) leisure is a vehicle for personal transformation. Kleiber et al. was cited by Iwasaki in his study of leisure as a stress survival strategy. Iwasaki (2005) conducted a qualitative study using focus groups of various marginalized populations including Indigenous people with diabetes, people who identify as gay or lesbian, people with a mobility impairment disability, and older adults with arthritis. A group of business managers was also included in the study. Respondents were asked open-ended questions about stress, coping, and the role of leisure. The groups’ main theme was a concept of creating space in one’s life, or an oasis, for intentional leisure as a stress coping tool. Each group also expressed spiritual and cultural needs in addition to a desire for social belonging. The author concluded that the participants demonstrated resilience in their use of leisure to gain meaning and empowerment as well as a sense of altruism. He urges psychology and counseling professionals to apply these findings which support utilization of individual strengths and consideration of diversity in managing stress and promoting health.

Another study measured the association of enjoyable leisure with psychological and physical well-being. Pressman and associates employed the Pittsburg Enjoyable Activity Test (PEAT) to assess 1399 individuals aged 19 years. Additionally, vital statistics were collected as well as psychometrics. The comprehensive study used several tests including the Profile of Mood States, Center for Epidemiological Studies Depression Scale, Satisfaction with Life Scale, Life Engagement Test, 12-item Social Network Index, Paffenbarger Activity Questionnaire, Pittsburgh Sleep Quality Index, Short-Form Health Survey, BMI, waist circumference (WC), blood pressure (BP), cortisol levels, and

demographics. Higher PEAT scores were associated with positive affect, life satisfaction, life engagement, and social network diversity while negatively correlated with negative affect and depression. PEAT also had a significant correlation with lower BMI, WC, BP, and cortisol levels and higher perceived physical function. These remained true even after physical activities, such as sport, were removed from the covariates. Additionally, greater PEAT scores were associated with greater sleep and exercise outcomes.

Leisure Stress Coping Theory

Early research into how stress and health are connected indicates a need for self-management. Sachs stated that stress had surpassed the common cold as the most prevalent health problem in America. She believes that it is not stressful events themselves that precipitate health vulnerability, but how one responds to that event (Sachs, 1991). Later, Sobel (2000) echoed this observation that a large number of medical visits are psychosomatic in nature, citing the findings of a 20-year study from Kaiser Permanente that 60 percent of medical visits were “worried well”. Sobel encouraged medical practitioners to consider mind-body interventions to increase incidence of self-care and improve cost-effectiveness of healthcare. Sobel wrote that patients who develop social support, coping skills, and a sense of control could build confidence in managing their chronic disease. The author also stated that psychosocial interventions could influence determinants of health such as attitudes, beliefs, and mood.

Leisure scientists have long theorized and tested how control influences attitudes, beliefs, and mood. After all, leisure has been described as having freedom to do what one

desires. However, Plummer (2009) points out in his text that the feeling of freedom is not absolute or universal and that time, as well as resources and environment, are affected by many factors. Some of these factors were previously mentioned as social determinants of health and include race, income, and ability. Due to the subjective and abstract nature of leisure, research in this area has been challenging, whether measuring behavior, experience, attitude, or belief (Walker, et al., 2019). Consequently, a multitude of theories have been developed to not only predict behavior, but specifically how people can use leisure to improve quality of life.

During the late 1970s, in a controlled laboratory setting, Mannell tested Julian Rotter's locus of control personality dimension by manipulating the subjects' environment during "free time" which happened to be a waiting room (Walker et al. 2019). The subjects thought they were waiting for the experiment to begin and did not know the waiting room was the actual experiment. He found that subjects who chose to engage in a game that was available were more competitive, reported better mood, and had a shorter perception of the wait time than the subjects who were obligated to participate.

Coleman and Iso-Ahola (1993) reviewed literature supporting the idea that leisure facilitates stress coping, leading to general health benefits. One way this has been demonstrated is by the social nature of leisure activities. The companionship in shared activities may provide relief and feelings of support for people as they deal with life's stressors. The authors also found that characteristics reflecting self-determination, such as resilience and locus of control, can contribute to coping with stress and to health

maintenance. They concluded that these relationships and beliefs act as a buffer in times of stress (Coleman & Iso-Ahola, 1993). This confirms the findings of an earlier experiment by Bolger and Eckenrode (1991) focused on medical students experiencing exam stress. The authors deduced that discretionary social contact was associated with lower stress levels unlike non-discretionary social contact. Social leisure, therefore, is beneficial but could increase stress if it undermines one's sense of freedom and control. It is noted that self-determination and social support theory are also utilized in the public health field to predict and explain health behaviors.

Iso-Ahola and Park (1996) tested these ideas and a leisure activity as a psychosocial intervention aimed at buffering the stress-illness relationship. The authors studied 252 adults in 10 different Tae Kwon Do classes and measured the relationships between several factors: physical health problems, mental health problems, perceived health, life stress, intrinsic leisure motivation, perceived leisure freedom, leisure friendship, and leisure companionship. Stress, they discovered, had a positive relationship with physical and mental problems and that those with higher stress scores were less likely to perceive themselves to be in good health. All the leisure domains had a positive relationship with perceived health and a negative relationship with mental illness. In those who rated leisure companionship low, higher life stress correlated with depression. These findings support previous theories but do not fully explain how leisure acts as a buffer.

Iwasaki and Mannell (2000) developed the Hierarchical Dimensions of Leisure Stress Coping Model to embody several of the social and control ideas and theories being

tested as well as having palliative qualities. These concepts are presented as three tiers which help explain the different ways in which people utilize leisure to cope with stress. Additionally, Iwasaki and Mannell (2000) developed and tested a scale to measure these qualities and for use in subsequent research.

The first tier of the model, or Level 1, distinguishes leisure coping beliefs from leisure coping strategies. Leisure coping beliefs (LCB) develop over time and, as mentioned earlier, have been associated with health protection in previous research. Iwasaki (2003b) considers LCB to act as a buffer to the negative impacts of stress. Leisure coping strategies (LCS) are defined as situation-specific behaviors and intentional involvement in leisure. LCS is described by Iwasaki as a process by which an individual seeks an activity to achieve a certain outcome. An example might be, taking a run to escape from work stress or listening to music to improve mood. In this way, Iwasaki proposes leisure strategy as a mediator between stress and health. An important distinction is that people are apt to use leisure coping beliefs to buffer against stress when situational characteristics are weak (Iwasaki & Mannell, 2000). However, during the COVID-19 social distancing protocol, situational characteristics were a strong influence on behavior. Limits on how people gather, as well as closures of public cultural, recreational, and entertainment facilities have all impacted leisure behavior for the duration of the pandemic.

Leisure coping strategies have a second tier of subdimensions, or Level 2, which include leisure companionship, leisure palliative coping, and leisure mood enhancement. Leisure companionship is sought out through behavior and provides discretionary shared

experiences as a form of social support. This is different from leisure friendship, which is described as perceived social support. Leisure palliative coping is an escape-oriented activity that allows the participant to take a break or refresh in order to better handle a problem. Some leisure is sought to enhance or improve mood, such as spending time in nature (Iwasaki & Mannell, 2000).

Leisure coping beliefs also include a Level 2 which consists of leisure autonomy and leisure friendships. Each of these contain subdimensions, or Level 3, which is the most specific facet. Leisure autonomy has two dimensions: self-determination and empowerment. Self-determination is one's perception of control in making leisure activity choices. Empowerment is the extent of one's belief that they are entitled to leisure. While the concepts seem similar, they are nuanced as self-determination is concerned with a sense of freedom to choose and intrinsic motivation while empowerment indicates resistance against the demands of life to maintain self-care. The subdimensions of leisure friendships are listed as emotional support, esteem support, tangible aid, and informational support, which have all been identified as functions of social support. These dimensions have subtle differences, for example, emotional support could be comfort after the loss of a loved one, while esteem support could be encouragement after the loss of a competition. An example of tangible aid is helping someone move or lending tools while informational support would be offering advice or guiding someone towards solutions to a problem (Iwasaki & Mannell, 2000).

In addition to developing this model, Iwasaki and Mannell (2000) created scales to explore the concepts presented. The Leisure Coping Belief Scale (LCBS) measures the

dispositional factors while the Leisure Coping Strategy Scale (LCSS) measures situation-specific factors. A compilation of questions was formed to reflect these dimensions and tested on 247 first-year students from two universities. Participants were asked to think back to the most stressful event that they had experienced in the past year and to recall how they coped on a 7-point Likert scale. The scales were found to have a very high alpha reliability of .91 for the LCBS and .93 for the LCSS. A confirmatory factor analysis enhanced confidence in the usefulness of these scales in research.

After good reliability and validity were found, the scale was refined in a second preliminary study using fourth year recreation students as subjects. Iwasaki (2003b) later applied his LCBS and LCSS scales in a repeated-assessment field study to better understand leisure stress coping in college students. "Roles of Leisure in Coping with Stress Among University Students: A Repeated-Assessment Field Study" describes a three-phase test, where students were initially surveyed on baseline health, psychological well-being, and leisure coping beliefs. In the second phase, students were monitored twice a week for two weeks on stressful events that they experienced, ways in which they coped with the events, and immediate outcomes of stress coping. The third phase was conducted one week after the second phase and consisted of an additional health baseline and psychological well-being. According to Iwasaki, "leisure coping beliefs significantly predicted lower levels of mental and physical ill-health and to greater levels of psychological wellbeing above and beyond the contributions of general coping" (Iwasaki, p106, 2003a). Additionally, perceived coping effectiveness and stress reduction were significantly predicted by leisure coping strategies. The findings indicate that leisure as a

coping tool deserves greater attention in stress and health prevention, treatment, and research areas. In fact, Iwasaki and Schneider (2003) brought attention to the need for more research on the relationship between leisure, stress, and coping.

While Iwasaki used his scales in several studies, few others have availed themselves of the opportunity to apply this model for research across various populations and situations. However, Çevik (2020) recently conducted a study on 338 Turkish university students using Iwasaki's (2000) LCSS and Cohen's (1983) Perceived Stress Scale (PSS). The data were collected on a voluntary basis from the students attending Eskişehir Technical University during 2019-2020 academic year. The data showed that students were moderately to highly stressed but there was also a negative correlation between leisure coping strategies and stress. The study also revealed high scores in palliative stress coping, indicating that students use leisure as an escape from stressors (Çevik, 2020). Considering the limitations of these studies, with the most apparent being the almost exclusive focus on university student subjects, additional research into the leisure-stress relationship is warranted.

Leisure Trends During this Pandemic

Leisure stress coping beliefs and strategies are examined in this study to better understand the impact of modifications to leisure behaviors in observance of social distancing guidelines. While social distancing guidelines have been modified since vaccines became widely available in the U.S., the general public had been strongly encouraged to wear masks, keep a six-foot distance, and avoid crowds and gathering in

groups for the vast duration of the pandemic (CDC, 2020). The world seemed to go through a collective “sourdough bread phase” as outlined by Easterbrook-Smith (2020). The author explains this phenomenon as a combination of scarcity due to panic shopping and time at home, although many bakers described the activity as therapeutic, relaxing, and useful. Rice et al. (2020) identified an uptick in outdoor recreation by outdoor enthusiasts during early social distancing measures since public parks and trails remained open and available to support physical and mental wellness. Similarly, the National Recreation and Park Association (NRPA) (2020) staff reported that 83 percent of adults find that exercising in parks and on trails an essential part of physical and mental health maintenance during COVID-19. Additionally, 59 percent of survey respondents identified exercise in parks as extremely important to stress relief.

The World Leisure Organization analyzed recent empirical research and noted seven areas of emerging importance: the shift to home-based activities, increase of online offering leisure use, growing need for connectivity, accentuated inequality, survival of the leisure industry, increased demand for psychological support, and enhanced acts of volunteerism. The most notable issue was the shift to home-based activities such as work, study, and leisure as people practiced social distancing. The slowed pace of life led to a renewed interest in pursuing old hobbies and as well as new leisure activities (Sivan, 2020).

Screen time and online activities soared during the pandemic. Not only did people use these resources for work and school, but exercise videos, movies, and social media became favorite pastimes around the globe. Social media played an important part in the

third issue- the need for connectivity. Leisure fulfills social needs and many people started meeting socially online via apps like Zoom or Google Meets for work as well as activities like virtual game nights and art classes. This new trend has perhaps helped connect families with significant physical distances as people who are across the country can now have lunch together virtually. This identifies an issue of inequality since people in certain rural areas, countries, or experiencing poverty or homeless often do not have access to the internet as a resource (Sivan, 2020).

COVID-19 has had a negative impact on many industries including music, sports, amusement/entertainment, and tourism as well as the communities that host these events (Boesel, 2020). Some businesses have been able to modify their models to survive, for instance restaurants focused on take-out meals and museums offered virtual tours. One musical act developed a “space bubble” concert, where concert goers attended in a personal plastic bubble (Savage, 2021). Drive-in movies and even drive-in concerts became popular as well (Surico, 2020). Companies have scurried to modify and adapt to meet their customers’ needs at home, but many have needed government financial assistance to stay afloat.

Sivan (2020) reports that high levels of stress, hopelessness, and worry have increased the need for psychological services. Additionally, Colditz et al. (2020) describes how face-to-face social support groups, such as Alcoholics Anonymous, had been unable to meet in person as they once did. The lack of accessibility had been concerning as peer groups are a primary way for individuals to engage in recovery activities, even more so than by professional treatment. It is unclear yet whether online

meetings are as effective, but overdose deaths have increased by 40% during the pandemic (Friedman, 2021). Volunteerism has emerged as a positive outcome.

Americans have been moved to assist each other by delivering meals, making masks, and helping each other with homeschooling and babysitting needs. These intrinsically motivated acts of solidarity and kindness have increased engagement in volunteering as an important leisure activity (Sivan, 2020).

Personality

While self-determination and social support theories are widely accepted in both leisure science and health behavior theories, it is somewhat presumptuous to assume social distancing has been problematic for all. Personality, as well as other lifestyle factors, could have some bearing on how participants respond to the pandemic. This consideration is not directly related to the research question but may have a bearing on therapeutic recreation practice implications. Self-determination may dictate whether there is a need for social support, and the two theories should be considered independently. Iwasaki and Mannell (2019) acknowledged the role of personality in a study exploring the relationship between cognitions and intrinsic leisure motivations (ILM). They concluded that personality had variable influence on behavior across situations. ILM, however, is a simplistic approach since it may help explain how self-determination is influenced by autonomy, but not how social support is influenced or how other facets of personality factor in.

The “Big Five” personality traits have been used to predict a wide variety of behaviors including both leisure and coping behaviors. Factors such as extroversion,

agreeableness, conscientiousness, neuroticism, and openness to experience have been identified through joint factor analysis to predict behaviors such as competition, adaptation, endurance, indulgence, and altruism (Walker, 2019). Not only could there be a tendency towards one or more of these traits to influence leisure beliefs and strategies, but general stress coping and perceived stress as well. Historically, there has been extensive research correlating the “Big Five” traits with coping styles, but few within the context of COVID-19. Prentice (2020) examined the “Big Five”, Emotional Intelligence, and coping with governmental social distancing mandates in China. While it was thought that extroversion/introversion would determine coping techniques, the author found that openness to experience was the only statistically significant trait in predicting coping behavior.

CHAPTER THREE

Methods

The purpose of this study is to assess the relationships among leisure stress coping beliefs and strategies, perceived stress and health, and personality. The study employs a correlational design and survey model using the Qualtrics platform.

Sample and Sampling Procedure

Due to time constraints, social distancing guidelines, and cost, a nonprobability convenience sample of adults was recruited through an opt-in social media and email campaign after consent was obtained (Appendix A). The subject criteria included American adults age 18 and over who consented to participate in the study. Distribution of the invitation to take the survey (Appendix B) occurred via email and social media. The communication targeted multiple groups of hobbyists, healthcare workers, recreation professionals, individuals recovering from substance use disorders, mental health professionals, educators, students, and other interest groups. The invitation was designed to be easily distributable by recipients to people within their network and recipients were encouraged to share the invitation with others who fit the criteria. An example of the invitation is included in Appendix C and D. The survey was available for two weeks from March 25 through April 8, 2021. The initial invitation was distributed on March 25 and a second, follow-up communication was launched on April 1, 2021.

Instrumentation

The survey consisted of six parts: the modified perceived stress scale (PSS-10-C), leisure coping belief scale (LCBS), leisure coping strategy scale (LCSS), ultra-brief big 5 inventory (BFI-10), perceived health scale (EQ-VAS), and demographics.

Perceived stress. The measure selected for this study is a modified version of Cohen's Perceived Stress Scale (PSS-10), one of the most widely used and respected stress measurement tools (Cohen, 1983). Pedrozo-Pupo and colleagues (2020) modified the scale to be specific to perceptions of COVID-19-related stress. The resulting Perceived Stress Scale for Covid-19 (PSS-10-C) was tested with a sample of 406 individuals from Columbia aged 19-88. It was deemed reliable, with high internal consistency (Cronbach's $\alpha = 0.86$). The 10-item scale asks respondents to reflect on the last seven days when responding to each item. In this study, subjects were asked to reflect on the 12-month span of social distancing to determine their perceptions of the stress they felt over the pandemic period. Sample items include, "I have been upset that things related to the epidemic are out of my control", and "I have felt nervous or stressed about the epidemic". Items are measured on a 5-point scale ranging from 1 = never to 5 = always. Four of the ten items are reverse-scored. Items were averaged to create an overall measure of perceived stress related to Covid-19.

Leisure Coping Beliefs. Leisure coping beliefs were measured using the Leisure Coping Belief Scale (LCBS), developed by Iwasaki and Mannell (2000) in support of the Hierarchical Dimensions of Leisure Stress Coping Model. The scale features six dimensions that are thought to act as buffers to stress and are reflective of disposition.

Those variables are: self-determination, empowerment, emotional support, esteem support, tangible aid, and informational support. The 30-item scale was tested by Iwasaki and Mannell on 247 college freshmen and was found to have an alpha reliability of .91. The alpha reliability for the subscales overall were moderately high, ranging from .70 to .85. Subjects were asked to reflect upon the most stressful event of the last year and how they coped with it on a 7-point Likert scale where 1 = very strongly disagree and 7 = very strongly agree to indicate whether they agreed with statements such as “I gain feelings of personal control in leisure” and “I feel that I’m valued by my leisure companions”. Three reverse-scored items were included.

In this study, participants were asked to respond to the prompt on a 7-point scale with 1 = very strongly disagree and 7 = very strongly agree. Each dimension was then averaged to determine a score to then correlate with the other variables.

Leisure Coping Strategies. The Leisure Coping Strategy Scale (LCSS) was selected to compliment the LCBS by offering additional insight into situation-specific actions as they were reported. The 18-item scale asked participants to indicate their level of agreement with each statement (e.g., “Leisure helped me feel better”) on a 7-point Likert scale with 1 = very strongly disagree and 7 = very strongly agree. Iwasaki and Mannell (2000) describe leisure coping strategies as a process that is distinct from leisure coping beliefs because they mediate the effects of stress on health rather than act as a buffer. Additionally, they proposed that when situational context is weak, people are more likely to cope consistently with their personality. Conversely, when a situational influence is stronger, people are more likely to act or behave according to the situation.

For example, an introvert may become motivated to socialize due to isolation caused by social distancing. Iwasaki and Mannell (2000) found the LBSS had an alpha reliability of .93 and the three dimensions, companionship, palliative coping, and mood enhancement, also showed high internal reliability at .87, .86, and .85 respectively.

This model and corresponding scales were chosen for their comprehensive nature and attention to dynamic factors, such as the different ways social support is utilized and personal values regarding leisure. Despite this advantage, one possible limitation with the model is the presentation of belief and strategy as parallel qualities although it could be argued that the former may influence the latter. It is also recognized that some of the questions are leading and could be considered biased. Subjects were asked to reflect upon COVID-19 related stress to facilitate consistency among the respondents in recalling their experiences.

Personality. The Big Five Inventory was selected in consideration of complex disposition, and yet the desire to support subject participation by considering brevity as a survey quality dictated the use the 10-item Big Five Inventory (BFI-10). The original version included 44 statements, and participants were asked to indicate their level of agreement with statements describing how they see themselves on a five-point Likert scale with 1 = Strongly Disagree to 5 = Strongly Agree. Rammstedt and John (2007) tested the BFI-10 on 1,634 subjects in two countries (U.S. and Germany) and reported an eight-week test-retest mean coefficient of .75 overall. The study found the BFI-10 to possess acceptable psychometric properties, capturing 70 percent of the full-version BFI variance and retaining 85 percent of the retest reliability. Additionally, discriminant and

structural validity remained the same (Rammstedt & John, 2007). While the primary purpose of this study is to explore leisure coping, the researcher believes that personality may be a correlating factor. As such, BFI-10 is deemed appropriate in this case with acknowledgement of its inferiority to the full version.

Health. A EuroQol-visual analogue scale (EQ-VAS) was included in the survey in response to Iwasaki's (2000) claim that leisure coping strategies serve as a mediator between stress and health. The EQ-VAS is a component of the widely used health-related quality of life survey, EuroQol-5 Dimension (EQ-5D). The question appeared as a sliding scale ranging from 0 = worst possible health to 100 = best possible health. Participants were asked to indicate on the scale how good or bad their health was on that day. The scale is simple and efficient but is a subjective measure that may be influenced by mood, situations, and personality. Whynes (2008) compared the question against the full questionnaire as well as a meta-analysis of existing research and found that lower scores have a positive correlation with disability and higher scores have a positive correlation with locus of control. The EQ-VAS may be useful in finding what kind of relationship leisure coping strategies have with greater perceived health.

Demographics. No personal identifying information was collected, and participants were ensured that demographic information was purely voluntary. Certain demographic information had been identified in the literature to have some bearing on perceived stress during COVID-19 including race/ethnicity, disability status, living conditions, age, and occupational impacts. These were included in the survey to better understand nuances in subjects' reported data. The survey is included in Appendix B and

was distributed electronically using Qualtrics. The data were analyzed descriptively, the reliability of scales assessed using Cronbach alpha, and the interrelationships were tested using Pearson Product Moment Bivariate Correlations in SPSS.

CHAPTER FOUR

Results

Demographics

Out of a total of 92 complete responses, participant ages ranged from 21-84 years and the median age of respondents was 48.7. Eighty-five percent of respondents reported their race as Caucasian with only eight identifying as another race or Hispanic and six preferring not to answer. Female pronouns were selected by 62.3 percent of respondents, 17.4 percent preferred male, 5.9 percent indicated gender neutral and 14.4 percent did not identify a pronoun preference. With regard to their occupations, most respondents held white-collar jobs such as healthcare workers, teachers/ professors, analysts, and recreation professionals or were retired. An additional 34.3 percent of respondents identified as essential workers, and 31.4 percent were able to work from home. Nearly three percent changed jobs due to COVID-19 and two percent were unemployed because of the pandemic. Another 16.7 percent were unemployed for other reasons.

Perceived Stress and Health

The mean score for the PSS-10-C, or perceived stress during COVID-19, was 16.2 with a range of 1-32. The possible range for this scale is 0-40 with 0-13 considered low stress, 14-26 considered moderate stress, and 27-40 considered high stress. Perceived health, as measured by the EQ-VAS, had a possible range of 0-100 with 0 being the

poorest health imaginable and 100 being the best health imaginable. Scores ranged from 9-100 with a mean score of 70.97.

Dimensions of Leisure Stress Coping

Pearson Product Moment Correlations between the variables were performed using SPSS as it was deemed the most appropriate method for the sample size (Table 1). Firstly, perceived COVID-19 related stress and perceived health had a significant negative correlation ($r = -.323$, $p = 0.01$) as hypothesized. A set of correlations were calculated between the dimensions of leisure stress coping beliefs and strategies, perceived stress, and perceived health. The dimensions of leisure stress coping beliefs had more significant correlations with perceived health than with stress. The only belief dimension to have a significant correlation with both perceived stress and perceived health was tangible aid, which was negatively correlated with stress ($r = -.242$, $p = 0.05$) and positively correlated with perceived health ($r = .235$, $p = 0.05$). Stress was negatively correlated with the other dimensions, however without statistical significance. Perceived health had a significantly positive relationship with tangible aid, esteem support, self-determination, and leisure empowerment. The leisure stress coping strategy leisure mood enhancement was the only strategy dimension to correlate significantly with stress and health, specifically, leisure mood enhancement was negatively correlated with perceived stress ($r = -.243$, $p = 0.05$) and positively correlated with perceived health ($r = .375$, $p = 0.01$).

Table 1

Correlations among Leisure Stress Coping Beliefs and Strategies, Perceived Stress, and Perceived Health

	Perceived Stress	Perceived Health
Leisure Stress Coping Beliefs		
Leisure Autonomy		
Self-Determination Disposition	-.101	.326**
Empowerment	-.073	.278*
Leisure Friendships		
Emotional Support	-.112	.176
Esteem Support	-.090	.257*
Tangible Aid	-.242*	.235*
Informational Support	-.101	.180
Leisure Stress Coping Strategies		
Leisure Companionship	-.110	.139
Leisure Palliative Coping	-.135	-.031
Leisure Mood Enhancement	-.243*	.375**

*Correlation is significant at the 0.05 level

**Correlation is significant at the 0.01 level

Personality

The Big Five personality traits were tested, as expressed in Table 2, since it was hypothesized that people with an introverted personality would experience less stress due to preference for solitary activities. While extroversion did have a significant positive relationship with leisure friendships and emotional support ($r = .338, p = 0.01$) and leisure companionship ($r = .437, p = 0.01$), there was no significant correlation with perceived health or stress. The only personality traits to significantly correlate with perceived COVID-19 related stress were agreeableness and neuroticism, that were negatively correlated with perceived stress ($r = -.292, p = 0.01$) and positively correlated with perceived stress ($r = .476, p = 0.01$), respectively. Neuroticism had a significant negative correlation with perceived health ($r = -.334, p = 0.01$), but no other personality traits correlated with the EQ-VAS. Personality did not significantly correlate with dimensions of leisure stress except for agreeableness and conscientiousness that had a positive relationship with tangible aid ($r = .287, p = 0.01$; $r = .272, p = 0.05$, respectively). In addition, conscientiousness also correlated significantly with esteem support ($r = .211, p = 0.05$), empowerment ($r = .305, p = 0.05$), and leisure companionship ($r = .288, p = 0.05$), making it the trait with the most positive relationships to dimensions of leisure stress coping.

Table 2

Correlations of Big Five Personality Traits with Dimensions of Leisure Stress Coping, Perceived Stress, and Perceived Health

	Extroversion	Agreeableness	Conscientiousness	Neuroticism	Open to Experience
Perceived Stress	.033	-.292**	-.168	.476**	.078
Perceived Health	.013	-.064	.178	-.334**	-.152
<hr/>					
LSCB					
Leisure Autonomy					
Self-Determination	.122	.161	.123	-.005	.154
Empowerment	.084	.046	.305**	-.020	-.031
Leisure Friendships					
Emotional Support	.338**	.131	.187	.022	-.013
Esteem Support	.196	.122	.211*	-.082	-.029
Tangible Aid	.205	.287**	.272*	-.141	-.027
Information Support	.176	.160	.045	-.040	.007
LSCS					
Companionship	.437**	.095	.288**	.026	.056
Palliative Coping	.084	.019	.167	.087	.002
Mood Enhancement	.166	.109	.076	-.188	-.010

*Correlation is significant at the 0.05 level

**Correlation is significant at the 0.01 level

CHAPTER FIVE

Conclusions

Discussion

The purpose of this study was to assess the relationships among leisure stress coping beliefs and strategies, perceived stress and health, and personality. The hypotheses were partially supported. The dimensions of leisure stress coping which were hypothesized to be negatively correlated with stress (self-determination and leisure companionship) was not found. The literature review supported social support theory and internal locus of control as predictors of behavior. As such, it is not entirely surprising that tangible aid and leisure mood enhancement were found to be of importance in mediating and buffering stress. Both dimensions were the only two to have both a significantly negative relationship with perceived stress and positive relationships with perceived health.

Tangible aid is one function of social support, although it is not confined to leisure companions as providers. Loved ones and social services or community organizations can also provide tangible aid, especially when leisure companions are not an option. The tangible aid dimension embodies the belief that leisure companions can be relied upon for help either physically (labor) or in terms of resources (e.g. monetarily). Perhaps believing that there is some sort of tangible aid available, whether it is or not, is enough to buffer stress and protect health.

Leisure mood enhancement is a leisure coping strategy or action taken in response to a strong situational influence. For example, a person experiencing COVID-19 related stress may engage in an enjoyable activity to change a negative mood, thereby mediating the impact of stress on health. In the context of social distancing, it makes sense that mood enhancement would be utilized more than companionship. Research supports nature-based activities such as hiking, biking, and gardening as mood enhancing (Walker et al., 2019), which was reflected in leisure trends during this pandemic along with increased park use (NRPA, 2020).

While self-determination was not significantly negatively correlated with perceived stress as hypothesized, it did have a significant positive relationship with perceived health. This affirms Iwasaki and Mannell's (2020) idea that dispositional coping styles are more likely to occur when situational factors are weak. However, the pandemic presented a strong situational influence on leisure stress coping during which dispositional determination was less available.

As expected, perceived stress did have a significant negative relationship with perceived health. It is interesting to note that the literature supports that actual stress adversely affects actual health. This, along with several significant correlations with dimensions of leisure stress coping, raises the question of whether interventions based solely on perception can protect health.

The data failed to support the hypothesis that introversion would be negatively correlated with stress. Walker, Kleiber, and Mannell (2019) associate extroversion with boredom in leisure and increased risky behavior which could manifest as maladaptive

coping to include substance use or gambling. In fact, it has been reported that people with substance use disorders increased usage during the pandemic, so it was deduced that those with extroverted personalities who might rely on social support would experience more stress during COVID-19 (CDC, 2020a). This could still be the case as the sample was small and those with extreme stress or active substance use may not have been as accessible for data collection. The assumption that those with introverted personalities would thrive during social isolation and stay-at-home orders has not been supported as this study fails to identify that extroverts had more stress related to COVID-19.

One personality trait that did show to have a strong relationship with perceived COVID-related stress was neuroticism, which is the general tendency to experience anxiety, depression, and self-consciousness. This supports the literature that states those with emotional stability are less effected by social distancing impacts. Research presented in the literature review did identify people with prior mental health issues as more vulnerable to COVID-19 related stress, however they also had more knowledge and practice using coping skills (Asmundson et al., 2020). It is therefore somewhat surprising that neuroticism had a negative relationship with perceived health considering many people would have previous exposure to stress coping. It is important to remember that perceived health is not a measure of actual health, but one's belief about their health and that having a neurotic personality trait, or self-defeating personality, can skew perception of stress and health. Additionally, having more exposure to stress coping interventions does not necessarily facilitate leisure stress coping. Walker and associates (2019) have reported that people with this trait are less apt to engage in social activities and that they

experience less enjoyment from leisure. Additionally, the strong situational context of social distancing may have made preferred coping methods unavailable.

It was hypothesized that openness to experience would negatively correlate with perceived stress because of its association with flexibility, incorporation of new ideas, and tendency towards nature-based activities. That trait, however, was not significantly correlated with any of the variables. The only trait to have a significant negative relationship with perceived stress was agreeableness. Agreeableness is associated with characteristics such as trustworthiness, honesty, and altruism and is in contrast with hostility, self-centeredness, and indifference. According to Walker, Kleiber, and Mannell (2019), people with this trait are likely to spend their leisure time in service to others, such as coaching, teaching, or volunteering, as well as socially engaged, including social media use. Considering this, it would seem the pandemic created a space for people with this trait to thrive through providing tangible aid for their social network and using technology to stay integrated. It should be noted that agreeableness also had a significant positive relationship with tangible aid, so reciprocation and sense of community may be of benefit to this group.

Lastly, conscientiousness was the most highly and significantly correlated with dimensions of leisure stress coping but not with perceived health nor stress. People who score low on this trait tend to be impulsive and self-gratifying. In contrast people who score high on this trait tend to be organized, reliable, and responsible (Walker et al., 2019). They also have a strong work ethic, are goal-oriented, and often enjoy serious leisure pursuits. Because of this, they often have trouble letting go or using leisure to

escape, which is reflected in the weak correlations with mood enhancement and palliative coping. However, this is the only trait to have a significant positive relationship with leisure empowerment and esteem support, which is fitting considering goal setting and achievement requires dedicated time and may enhance self-esteem. It should be noted that informational aid, palliative coping, and self-determination did not correlate with any variables tested in this study.

In summary, the leisure stress scoping belief dimension of self-determination and the leisure stress coping strategy dimension of leisure companionship did not negatively correlate with perceived COVID-19 related stress as expected, but the belief dimension of tangible aid and strategy dimension of leisure mood enhancement did. Perceived stress was negatively correlated with perceived health. The dimensions of tangible aid and leisure mood enhancement were positively correlated with perceived health, but not empowerment as hypothesized. The personality trait openness to experience had no significant relationships to any variables and extroversion was positively correlated with social dimensions but not with perceived stress, as hypothesized.

Implications

While prior research has supported self-determination as a stress buffer (Coleman & Iso-Ahola, 1993; Iwasaki & Mannell, 2000), the strong situational context of a pandemic may have influenced how important or impactful disposition or autonomy is when considering leisure stress coping. Based on study results, it appears that the generalization of previous knowledge across situations and populations may be ill-

conceived. COVID-19 awarded a very unique opportunity to study leisure stress coping under a universal, long-term, and dynamic stressor during which dimensions of leisure stress coping were applied under a strong situational context. This gives practitioners and researchers alike valuable information should a second wave, pandemic, or other natural disaster present a threat to well-being. Recreation professionals can retain the findings of this research under a strong situational context to inform decisions when considering dispositional limitations such as restrictive settings, functional disability, or other barriers to self-determination and discretionary leisure.

Some leisure trends during this pandemic, as described in the literature review, reflect the correlations between perceived stress and dimensions of leisure stress coping. Tangible aid and leisure mood enhancement had negative relationships with COVID-19 related stress. The trait agreeableness also had a negative relationship with perceived stress. All three of these variables have a common theme of altruism. Altruistic behavior provided in leisure activity volunteerism, a classification of recreation programming, should be a key implication and application discussion of these results towards a solution to pandemic related stress and health protection.

Agreeableness is often described as prosocial. People with this trait have been known to help others, be selfless, and perform caring acts in a wide variety of situations. However, personality does not always determine altruism, which is also influenced by situational pressures, culture, spiritual beliefs, and mood. Research has shown that some cultures value empathy more than others and that some people are more apt to help people who they perceive to be culturally similar to them (Aronson et al., 2016).

According to Aronson and associates, people are likely to help when they are in a good mood, however sadness can also lead to a helping behavior because people are more motivated to engage in rewarding activities that make them feel better. Guilt is another emotion that contributes to altruistic behavior as a way of “balancing things out”.

Research has confirmed volunteerism and altruistic leisure pursuits can improve mood. In one study, Glomb et al. (2011) tested the idea that mood follows action when people demonstrate altruistic behavior such as volunteering or spending money on others. These researchers proposed that bad mood antecedes a good deed, and that good mood follows. The hypothesis was supported, and the authors concluded that altruistic behavior is an effective form of mood enhancement. They also found that people who score higher in extroversion trait received more mood regulation benefits than those scoring lower, or introverts.

This idea is supported by Sprecher (2007), who lists several reasons that people engage in altruistic behaviors: 1) doing something for others is fulfilling and can increase self-esteem, 2) people help when they perceive rewards, including self-rewards, for doing so, 3) when people feel sad or other negative emotions, they sometimes help others to repair their mood. Sprecher goes on to test the mood enhancement qualities of altruism, including the receiving aspect, which can facilitate feelings of gratitude and comfort, in addition to the giving aspect. One hundred eighty university subjects were surveyed using demographics, descriptions of helping behaviors, and the Compassionate Love Scale. The author found both giving and receiving help may be motivated by the anticipation of positive affect and that mood enhancement effects vary depending on disposition. This

strengthens the findings of this study and the application of this knowledge into developing a plan towards robust reciprocal altruistic behaviors.

A Stanford University Longitudinal Study of Aging, conducted in 2005 by Harris and Thoresen (as reported in Post & Neimark, 2007), followed over 7,500 Americans and found that frequent volunteering was strongly linked with later mortality. Post and Neimark (2007) also cite work by Oman, who found that older volunteers had a 64 percent lower mortality rate than non-volunteers. He concluded that volunteering was more health-protective than mobility, regular exercise, and attendance of religious services.

Volunteerism can also serve as a conduit to social connectedness during social distancing measures. Brown, Hoyer, and Nickolson (2012) conducted research on the relationship between volunteering and well-being. They surveyed 10,840 individuals about self-efficacy, self-esteem, social connectedness, subjective well-being, and self-reported mental health. They discovered that volunteers scored significantly higher in the first four variables listed than non-volunteers, and that self-efficacy, self-esteem, and social connectedness were mediators between volunteerism and well-being.

Practical Application

Volunteering as a leisure pursuit serves both the giver as a mood enhancement tool and the recipient of goods and services, or tangible aid. Promotion of altruistic behavior and leisure pursuits can be realized on both an individual as well as community level. In the future, the WHO and CDC might consider adding volunteerism to their lists

of health-protective activities that the public could utilize. Organizations can share the benefits of volunteerism in recruitment practices. Certified Therapeutic Recreation Specialists (CTRSs) and other recreation professionals, as well as other social science and healthcare practitioners, should educate individuals and small groups at the community level. While some schools and employers require volunteerism, it is important to note that mandatory volunteering can decrease interest and benefits by undermining intrinsic motivation (Aronson et al., 2019).

Volunteerism has long been utilized in recreation programming and therapeutic recreation (TR) interventions to facilitate community integration, enhance vocational skills, improve self-esteem, increase self-efficacy and self-determination, enhance empathy and understanding of diversity, and provide intrinsic motivation (Porter, 2016). It has also been useful in treating conditions associated with neurotic or extraverted personalities such as depression, antisocial behaviors, and risk-taking behaviors, and while personality seems to have some bearing on the extent of which giving behavior impacts mood, it does not seem to negate the effects.

CTRSs can facilitate development of altruistic leisure pursuits through leisure education and utilizing some or all of the Partnership F.I.V.E. approach, a construct developed by the U.S. Department of Education, Rehabilitative Services Administration. Partnership F.I.V.E. (Fostering Inclusive Volunteer Efforts), is a tool for removing barriers for vulnerable populations, but this approach could work for all. The components include recruitment and preparation, assessment, matching, building supports, communication, and evaluation (Miller et al., 2005). Assessing the client's leisure

interests, personal strengths, and barriers can help the CTRS collaborate with the individual to determine potential volunteer opportunities.

Examples of organizations that are accessible and accommodating to a range of personalities and abilities include animal shelters/humane societies, Special Olympics, National Alliance on Mental Illness (NAMI), libraries, thrift stores, and religious and non-profit organizations such as shelters and food pantries. Social support groups are often solely dependent on peer volunteerism, such as 12-step recovery groups. These groups, which are likely frequented by individuals with recreation dysfunction and neurotic or extroverted traits, have identified altruistic behaviors, or service work, as a cornerstone of well-being (Hopeman et al., 2009). The 12th step itself is the action of helping others with a general goal of becoming productive members of society (Anonymous, 2008).

Many studies have been conducted on why people help and on why some people do not, which has much to do with circumstances and personal disposition. This has led to the exploration of techniques that may increase prosocial behavior. Greitemeyer (2010) conducted research on whether video games can increase the likelihood that the player will act in a helpful manner. Two groups played video games. One group played a puzzle game called Tetris, while the other played Lemmings, a game with a goal of caring for a group of critters by helping and saving them. Afterward, the individuals were presented with an opportunity to help somebody either by picking up pencils someone had dropped, volunteering for research, or intervening in a fight. The group that played the prosocial game were twice as likely to help. Similar results have been obtained from research using

songs that support prosocial behavior (Aronson et al., 2016). These findings can be of use to professionals and others who would seek to enhance prosocial behaviors in others.

Personality, and in particular Big Five Factor, has been vigorously researched and is widely accepted as a consistent and reliable predictor of leisure behavior. It can also be applied to predict recreational dysfunction as confirmed by Hopewood et al. (2009). The authors surveyed 455 subjects over five years using the Neo Personality Inventory, Social Adjustment Scale, and Longitudinal Interval Follow-up Examination. Their findings reinforce that personality assessment would be a useful component of the diagnostic and planning process. The researchers reported that neuroticism correlated positively with global dysfunction, agreeableness negatively predicts social dysfunction, extraversion negatively predicts social and recreational dysfunction, openness is negatively correlated with recreational dysfunction, and conscientiousness is negatively related with work dysfunction. Another idea to consider is that personality is not necessarily fixed. While it may be beyond any professional's scope to change a client's personality, emerging research suggests personality can transform at the same rate as other life variables such as marital and financial status, as well as corresponding subjective life-satisfaction (Boyce et al., 2012).

Practitioners should also consider that leisure is not always conducive to coping with stress. Hutchinson, Bland, and Kleiber (2008) lists several considerations regarding assessment, such as whether the client perceives they have stress, barriers due to disability, and history of maladaptive leisure activities. Additionally, leisure activity options should be carefully considered for fit. High-performance activities could increase

stress and anxiety, as well as activities that the participant can no longer engage in at previous performance levels. Social, physical, and cognitive function should be considered, and the activity evaluated to ensure it fits the client's values and interests, helps reduce stress, improves mood, and helps the client achieve their goals. This may or may not include volunteerism or another altruistic activity (Hutchinson et al., 2008).

As it is, the general population does not have regular access to recreation therapy, and the pandemic made access to both therapeutic and recreational activities a challenge. Social support groups, senior centers, special interest groups, and therapy sessions ceased or moved to online platforms. However, people still found opportunities to help one another, whether through a formal volunteer job, such as emergency medical services, mental health phoneline support, or informally. The latter was seen in the leisure trends during COVID-19, as people helped one another with childcare, homeschooling, mask making, and more (Sivan, 2020). Some people lost work or began telecommuting, which allowed more free time to engage in rewarding activities. Perhaps guidance towards altruistic behaviors from healthcare professionals, organizations, government officials, or leisure scientists could decrease the impacts of profound stress on the population. In addition, including community members in problem solving can provide a sense of hope, ownership, and purpose while simultaneously creating resources, or tangible aid, easing the burden experienced by more vulnerable populations, or creating opportunities to be of service to the community.

Limitations and Implications for Further Research

The COVID-19 pandemic offered a unique opportunity to apply several widely accepted theories and ideas to a strong, virtually universal situational context. One strength of this study is the common stressor of social distancing and ramifications as a constant factor. In the past, test participants using the LSCB and LSCS scales were asked to reflect on a stressful time in the last year, which is a very subjective premise since their stressors varied by personal experience. In this study, subjects were asked to reflect upon the same stressor, which awarded insight into perception and factors which possibly influence perception of stress and health. Additionally, previous research in leisure stress coping had been largely conducted with college students, which provides an understanding limited to a particular developmental stage. This study did not exclude college students but was open to a broad range of participants in the hopes that inclusion would provide diversity in the data. While the age range varied, with the majority of participants indicating middle-late adulthood, the bulk also identified as Caucasian professionals. This limits the findings as the most vulnerable populations, such as racial and ethnic minorities or socioeconomically challenged individuals, are underrepresented in the data.

Another limitation of this study was the small sample size. Time and subject access constraints imposed by social distancing created limitations. The recruitment process and survey were conducted virtually, and the questions asked subjects to recall a specific time frame, limiting the length of time the survey was applicable. The sample size and demographics reflects subjects with time to respond to the invitation and access to online resources. Another consideration is that people who were apt to volunteer for

this research study may have over-represented the variable of agreeableness trait, however this should not have any bearing on the correlations with perceived stress and health.

Because minority and socioeconomic populations were underrepresented, it is prudent to consider lack of access to leisure time and resources for populations that are most vulnerable to COVID-19 related stress as well as other, everyday stressors. All recreation professionals and healthcare workers should strive to find solutions and provide access to leisure and life-enriching activities. Opportunities to engage in community functions, arts, and cultural or educational programs should be of abundance and financially accessible in geographic areas prone to socioeconomic challenges and to vulnerable groups. Removing barriers to stress-buffering and health protective activities could enhance quality of life, decrease the impacts of stress, and increase health and life satisfaction for disenfranchised populations.

Future research in leisure stress coping should enhance the body of knowledge by focusing on underrepresented populations. While the strong situational context of a global pandemic may or may not be replicable, further testing of dimensions of leisure stress coping beliefs and strategies during which dispositional input is limited may give additional insight into how people can mediate the effects of stress during extraordinary circumstances. Further, based on the scant correlations between stress and dimensions of leisure stress coping, it is prudent to question whether Iwasaki and Mannell's model is applicable during strong situational contexts.

While volunteerism has been the topic of social science research, studies of it as a leisure activity or wellness measure from a recreation standpoint could be expanded upon, particularly in efforts to increase the number of people who volunteer. The percentage of volunteering among Americans has steadily decreased this century as the Bureau of Labor Statistics (2016) report 29.4 percent for the year 2015. This indicates volunteerism is an underutilized leisure tool with potential benefits for both the giver and the receiver. The Bureau of Labor Statistics states the figures published may be an underrepresentation as much work is done unofficially and is considered “civil engagement” by the Corporation for National and Community Service (Sorrentino, Turner, & Klein, 2020).

Further research should focus on specific activities and how they relate to the dimensions of leisure stress coping. While altruistic behavior was gleaned from the results of this survey as a common denominator between tangible aid, leisure mood enhancement, and agreeableness, it is not likely to be a universal coping tool. For instance, many people found mood enhancement in outdoor recreation. While it may be helpful to identify activities which are health protective in general, researchers should bear in mind that factors such as self-determination and intrinsic motivation remain key, yet are lost once externally motivated. Information and guidance from practitioners, clinicians, and health agencies can empower individuals to make healthy choices, creating a collectively healthier community.

APPENDIX A

INFORMED CONSENT FORM

RESEARCH PROCEDURES

This research is being conducted to gain insight into how leisure may buffer and mediate stress. Participation will involve completion of an online survey. Consent to participate in the research allows use of your data for research purposes. Further, all data will be aggregated and no personally identifying information will be included.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There are no benefits to you as a participant other than to further efforts to address stress through leisure.

CONFIDENTIALITY

The data in this study will be confidential. No personal identifying information will be collected as part of the survey.

PARTICIPATION

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty. There are no costs to you or any other party. All participants must be at least 18 years of age.

CONTACT

This research is being conducted by Angela Schroeder, CTRS, QMHP-A, LPN at George Mason University. She may be reached at aschroe@masonlive.gmu.edu for questions or to report a research-related problem. You may contact the George Mason University Institutional Review Board office at 703-993-4121 if you have questions or comments regarding your rights as a participant in the research. This research has been reviewed according to George Mason University procedures governing your participation.

CONSENT

I have read this form and all of my questions have been answered by the research staff. I AGREE to participate in this study.

Name

Date

APPENDIX B

Leisure Survey

Q26 Greetings,

Thank you for your willingness to take a few minutes to participate in this survey. Your input is appreciated.

Q1 INFORMED CONSENT FORM: Leisure Survey

RESEARCH PROCEDURES

This research is being conducted to gain insight into how leisure may buffer and mediate stress for health protection. Participation involves completion of an online survey. Consent to participate in the research allows use of your data for research purposes. Further, all data will be aggregated and no personally identifying information will be included.

RISKS

There are no foreseeable risks for participating in this research.

BENEFITS

There are no benefits to you as a participant other than to further efforts to address stress through leisure.

CONFIDENTIALITY

The data in this study will be confidential. No personal identifying information will be collected as part of the survey.

PARTICIPATION

Your participation is voluntary, and you may withdraw from the study at any time and for any reason. If you decide not to participate or if you withdraw from the study, there is no penalty. There are no costs to you or any other party.

All participants must be 18+ years and live in the U.S.

CONTACT

This research is being conducted by Angela Schroeder, CTRS, QMHP-A, LPN at George Mason University. She may be reached at aschroe@masonlive.gmu.edu for questions or to report a research-related problem. You may contact the George Mason University Institutional Review Board office at 703-993-4121 if you have questions or comments regarding your rights as a participant in the research. This research has been reviewed according to George Mason University procedures governing your participation.

CONSENT

I have read the above form and my questions have been answered by research staff.

- ☐ Yes, I am willing and qualified to participate in this study (1)
- ☐ No, I am not willing/ not qualified to participate in this study (2)

Skip To: End of Survey If INFORMED CONSENT FORM: Leisure Survey RESEARCH PROCEDURES
This research is being conducted to g... != Yes, I am willing and qualified to participate in this study

Q2 The following statements relate to your leisure beliefs. Leisure refers to all non-obligatory time and activities.

Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
Leisure provides opportunities to regain a sense of freedom. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I gain feelings of personal control in leisure. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leisure is a self-determined activity for me. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure pursuits are freely chosen. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty in deciding what to do in leisure. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel constrained in leisure. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I decide what to do in my leisure time by myself. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 The following statements relate to your leisure beliefs. Leisure refers to all non-obligatory time and activities.

Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
My leisure involvements strengthen my ability to manage problems in life. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What I do in my leisure allows me to feel good about myself. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leisure contributes little to giving me energy to handle problems. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to openly express who I am in my leisure. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The things I do in my leisure help me gain confidence. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure participation enhances my self-concept. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Opportunities
to express
myself in
leisure
enhance my
self-concept.
(7)



Q4 The following statements relate to your leisure beliefs. Leisure refers to all non-obligatory time and activities.

Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
My leisure companions listen to my private feelings. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For me, leisure is a means of developing friendships. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel emotionally supported by my leisure companions. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack emotional support from my leisure companions. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure companions help me feel good about myself. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure companions hold me in high esteem. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I'm
respected
by my
leisure
companions.
(7)

☐☐☐☐☐☐☐

I feel that
I'm valued
by my
leisure
companions.
(8)

☐☐☐☐☐☐☐

Page Break

Q5 The following statements relate to your leisure beliefs. Leisure refers to all non-obligatory time and activities.

Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
When I need to borrow something, my leisure companions will lend it to me. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I need extra hands for doing tasks, I can turn to my leisure companions. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure companions would lend me money if necessary. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my leisure companions are happy to take care of my home, children, or pets while I'm away. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure companions assist me in deciding what to do. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My leisure companions give me advice when I am in trouble. (6)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

My leisure companions often provide me with useful information. (7)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

I can talk to my leisure companions when I am not sure what to do. (8)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Page Break

Q6 The following statements relate to your leisure behaviors. Leisure refers to all non-obligatory time and activities.

Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
My leisure allowed me to be in the company of supportive friends. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Socializing in leisure was a means of managing stress. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I dealt with stress through spending leisure time with my friends. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engaging in social leisure was a stress-coping strategy for me. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of companionship in leisure prevented me from coping with stress. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of my stress-coping strategies was participation in social leisure. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 The following statements relate to your leisure behaviors. Leisure refers to all non-obligatory time and activities. **Think back to COVID-19 related stress over the last 12 months and recall how you coped.**

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
I engaged in a leisure activity to temporarily get away from the problem. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Escape through leisure was a way of coping with stress. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leisure was an important means of keeping myself busy. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Engagement in leisure allowed me to gain a fresh perspective on my problems. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
By escaping from the problem through leisure, I was able to tackle my problem(s) with renewed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

energy. (5)
I took a brief
break
through
leisure to
deal with the
stress. (6)



Page Break

Q8 The following statements relate to your leisure behaviors. Leisure refers to all non-obligatory time and activities.


Think back to COVID-19 related stress over the last 12 months and recall how you coped.

For each statement, indicate your level of agreement on the scale.

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
My leisure helped me feel better. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I gained a positive feeling from leisure. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I maintained a good mood in leisure. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leisure involvements failed to improve my mood. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leisure made me feel miserable. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leisure helped me manage my negative feeling. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Q9 Please indicate on the scale how good or bad your health is today, in your opinion.
Do this by sliding the indicator to whichever point best describes your own health today, with 0 being the worst health you can imagine and 100 being the best health you can imagine.

	Worst health imaginable		Best health imaginable								
	0	10	20	30	40	50	60	70	80	90	100
Click and slide the bar up or down the on scale. ()											

Q10 The following statements relate to you and your feelings and thoughts during the last year. For each statement, please indicate the frequency with which you have experienced these feelings on the scale.

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)
I have felt as if something serious was going to happen unexpectedly because of COVID-19 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt that I am unable to control the important things in my life because of COVID-19. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt nervous or stressed about COVID-19. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been confident about my ability to handle my personal problems related to COVID-19. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt optimistic that things are going well with COVID-19. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have felt
unable to
cope with the
things I have
to do to
monitor for a
possible
infection. (6)

☐☐☐☐☐

I have felt
that I can
control the
difficulties
that could
appear in my
life as a result
of COVID-19.
(7)

☐☐☐☐☐

I have felt
that I have
everything
under control
in relation to
COVID-19.
(8)

☐☐☐☐☐

I have been
upset that
things related
to COVID-19
are out of my
control. (9)

☐☐☐☐☐

I have felt
that the
difficulties are
increasing in
these days of
COVID-19
and I feel
unable to
overcome
them. (10)

☐☐☐☐☐

Q11 How well do the following statements describe your personality? Indicate how much you agree or disagree on the scale.

I see myself as someone who...

	Strongly Disagree (-3)	Disagree (-2)	Disagree a little (- 1)	Neutral (0)	Agree a little (1)	Agree (2)	Strongly Agree (3)
...is reserved. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...is generally trusting. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...tends to be lazy. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...is relaxed, handles stress well. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...has few artistic interests. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...is outgoing, sociable. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...tends to find fault with others. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...does a thorough job. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...gets nervous easily. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...has an active imagination (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 What is your age in years?

Q13 What are your preferred pronouns?

- ☐ She/ her/ hers (1)
- ☐ He/ his/ him (2)
- ☐ They/ their/ them (3)
- ☐ Prefer not to answer (4)

Q14 What is your race and ethnicity? (Check all that apply)

- ☐ African American or Black (1)
- ☐ Asian (2)
- ☐ Caucasian or White (3)
- ☐ Latinx or Hispanic (4)
- ☐ Native American, Indigenous, Aboriginal, or First Nations (5)
- ☐ Native Hawaiian or Pacific Islander (6)
- ☐ Other/ unknown (7)
- ☐ Prefer not to say (8)

Q9 Which of these best describes your occupation? (Check all that apply)

- ☐ Essential worker (1)
- ☐ Able to work from home (2)
- ☐ Unemployed due to COVID-19 (3)
- ☐ Changed vocation due to COVID-19 (4)
- ☐ Self-employed (5)
- ☐ Not employed for another reason, such as family obligations, disability, school, retirement ...etc. (6)
- ☐ Student (7)

Q18 What is your occupation?

Q19 How many people live with you, not including yourself, but including partial or part-time residence, such as shared custody or active duty?

Q20 How many people depend on you for care or support to live, such as children, siblings, parents, or grandparents?

Q25 Are you at high risk for serious COVID-19 symptoms?

- ☐ Yes (1)
- ☐ Maybe (2)
- ☐ No (3)

Q21 Do you have a disability or a condition that causes impairment?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not sure (3)
- ☐ Prefer not to answer (4)

Q22 Do you rely on someone else for care or support to live?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Prefer not to answer (3)

Q23 Have you had COVID-19?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Not sure (3)
- ☐ Prefer not to answer (4)

Q24 Have you gotten any COVID-19 vaccination?

- ☐ Yes, partially vaccinated (1)
- ☐ Yes, fully vaccinated (2)
- ☐ Not yet, but I plan to upon availability (3)
- ☐ I choose not to get vaccinated (4)
- ☐ I cannot get vaccinated due to a health condition (5)
- ☐ Prefer not to answer (6)

Q25 What state do you live in?

Q26 Have you had prior experience or training in leisure stress coping?

- ☐ Yes (1)
- ☐ No (2)

APPENDIX C

You are invited

...to participate in research to enhance our understanding of how leisure and stress are connected.

Your survey input is valued and appreciated.

**If you are 18+ and live in the U.S,
follow the link in the post.**

The survey will take about 15 minutes.

**Please share this invitation with
everyone you know**

Thank you in advance for your participation!

Principle Investigator: Brenda Wiggins, PhD, Co-Investigator: Angela Schroeder IRB# 1729726-1
For questions or problems contact bwiggins@gmu.edu and aschroe@masonlive.gmu.edu
or the George Mason University Institutional Review Board office at IRB@gmu.edu

APPENDIX D

You still have a chance to take this survey!

**Give yourself a 10-minute break and
participate in research about leisure and stress.**

**If you are 18+ and live in the U.S. your
input is needed and appreciated!**

Follow this link:

Leisure Survey.

Please share this with everyone you know!

Thanks for being awesome.

Principle Investigator: Brenda Wiggins, PhD. Co-Investigator: Angela Schroeder IRB# 1729726-1
For questions or to report a research-related problem, you may contact bwiggins@gmu.edu, aschroe@masonlive.gmu.edu
or the George Mason University Institutional Review Board office at irb@gmu.edu

APPENDIX E

March 25, 2021

Re: RELATIONSHIPS AMONG LEISURE BELIEFS, LEISURE STRATEGIES, AND
PERCEIVED HEALTH AND STRESS DURING COVID-19

Dear Friend,

I am writing to let you know about an opportunity to participate in a voluntary research study about leisure stress coping. This study is being conducted by Angela Schroeder at George Mason University.

Participation includes an electronic survey that will take about 5-10 minutes to complete. Included is the link to the study and consent form:

[Leisure Survey](#)

You must be at least 18 years old and live in the U.S. to participate.

There is no compensation offered, no foreseeable risks, and benefits include contributing to a better understand leisure stress coping.

If you would like additional information about this study, please contact us at bwiggins@gmu.edu or aschroe@masonlive.gmu.edu. You may contact the George Mason University Institutional Review Board office at 703-993-4121 if you have questions or comments regarding your rights as a participant in the research.

Thank you for your consideration, and once again, please do not hesitate to contact us if you are interested in learning more about this Institutional Review Board approved project. You are encouraged to forward this email to your friends to promote inclusion and diversity in the results.

Brenda Wiggins, PhD.
Principal Investigator
Associate Professor, SRTM,
College of Education and Human Development
George Mason University
703-993-2068
IRB # 1729726-1

Angela Schroeder, CTRS
Co-Investigator

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BIOGRAPHY

Angela Schroeder graduated from Ferguson High School in 1995. She received her Massage Therapy Diploma from Virginia School of Technology in 2000, her Practical Nursing Diploma from Sentara School of Health Professions in 2003, her Associate of Arts and Science from Lord Fairfax Community College in 2017, and her Bachelor of Science in Health, Fitness, and Recreation Resources with a concentration in Therapeutic Recreation from George Mason University in 2019. She has been dedicated to supporting community health for over 20 years. When she is not working and writing papers, she makes stuff out of clay and plays outside.